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Syphilis of the Eye*

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One has but to look at our insane hospitals and schools for the blind to realize that the present campaign against syphilis is timely indeed. Of the new admissions to the Eastern Oklahoma Hospital during the past five years, 12.14 per cent have been infected with syphilis. The mental condition of 8.38 per cent was due to syphilis alone, while the infection in the other 3.76 per cent was incidental to some other form of insanity. The incidence of syphilis among the males was 13.6 per cent in contrast to 9.92 per cent among the females. Syphilis alone was the cause of the mental trouble in 10.43 per cent of the males and in 4.73 per cent of the females. For some unknown reason, possibly due to an immunity produced by menstruation and child bearing, the syphilitic female is less likely to develop neuro-syphilis than the syphilitic male.

I have recently completed an ocular examination of 100 males suffering from general paresis. Bilateral Argyll Robertson pupils were found 22 times while the monocular type was found three times. There were three cases of doubtful classification, in which the pupils would react slightly to light but would almost immediately dilate again. In one patient, this type of pupil was associated with an Argyll Robertson pupil in the other eye. Ten others had very sluggish pupils that could have been classed as of the Argyll Robertson type had the loose classification been used. Two of the Argyll Robertson pupils were about five mm in diameter and were associated with a typical Argyll Robertson pupil in the other eye; the remaining pupils were three mm or less in diameter. The pupils were unequal in 18 cases, two of which were of the Argyll Robertson type. Choroiditis was found in eight patients, binocular in two and monocular in six. Signs of a previous iritis were found in five cases, one binocular and four monocular. Optic neuritis, manifested by a slight swelling of the nerve head, was present eight times; binocular in three and monocular in five. Lens opacities were present in five cases, binocular in three and monocular in two. Optic atrophy was found in two cases, both of which were binocular. The most common defect was the atypical response to a cycloplegic, as 50 per cent reacted imperfectly to homatropine. In only about 25 per cent of the patients were the eyes free from manifest disease.

Syphilis has been called the great imitator. The truth of this statement is well demonstrated in the eye, for no part of this delicate organ is immune from the ravages of the spirochete.

A recent survey by Dr. Conrad Berens of New York revealed that 5.3 per cent of the blindness among children in schools for the blind is due to syphilis, as is also about 15 per cent of all blindness. This does not take into consideration the much larger number of individuals who are suffering to a lesser degree.

Congenital syphilis can be prevented to a great extent by treating, during preg-

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nancy, every woman who has been unfortunate enough to contract syphilis at any time during her life. This should be done regardless of the reaction of the blood and spinal fluid at this time. All too often a walled off focus of infection exists in treated cases even though the serology is negative. A case illustrating this point has been reported by Dr. F. Bruce Fralick of Ann Arbor. A man, hospitalized because of gonorrheal arthritis, during his stay in the hospital developed iritis, which he said had been recurrent at irregular intervals for a period of ten years. He denied any luetic infection, and since his blood and spinal fluid were both negative, the condition was considered of gonorrheal origin. Still suspicious, Dr. Fralick made a Kahn test on the aqueous of the infected eye, found it positive, and confronted the patient with this evidence. The patient then admitted having had an infection 11 years previously, followed by supposedly adequate treatment. While this case reported is in a male it could be equally true in the female. Thus we see such a focus of infection may lie dormant in any part of the body, producing few if any symptoms, becoming active during pregnancy, with the usual disastrous results.

The danger is too great, and the consequences are too grave to omit treatment during these periods of pregnancy. I wish, therefore, to repeat: every woman who has been unfortunate enough to contract syphilis at any time during her life should be treated during periods of pregnancy. This should be done regardless of the present reaction of the blood and spinal fluid. It has been estimated that this procedure alone would reduce the incidence of blindness due to syphilis by 50 per cent.

Any obscure disease of the eye is an indication for a blood test. The first sign of neuro-syphilis is frequently observed in the eye. Degenerative changes of the brain frequently parallel those in the eye, therefore, the more suggestive conditions, such as paralysis of the extra-ocular muscles, Argyll Robertson pupils, and optic atrophy, call for a complete physical and neurological examination as well as thorough laboratory tests on the blood and spinal fluid.

Interstitial keratitis calls for the same complete examination as the degenerative diseases, for it is usually caused by congenital syphilis. This form of keratitis may be associated with a negative blood and spinal fluid, in which case other signs of congenital syphilis should be sought. Tuberculosis may be the causative agent in, perhaps, 10 per cent of the cases. Dr. Berens lists eight other causes of interstitial keratitis. (These are smallpox, influenza, mumps, nephritis, meningococcemia, epidemic encephalitis, malaria, and dental sepsis.) When the blood and spinal fluid are negative and the stigmata of congenital syphilis are a b s e n t, a thorough search should be made for other causes. The nature of the treatment will, of course, depend upon the cause. Under proper treatment 60 per cent will regain useful vision.

In abnormalities of the extra-ocular muscles, one will often notice the peculiar position in which the head is carried. Turning the head in the proper position will lessen the strain on a weakened muscle and often prevent diplopia. The patient soon learns the position that gives him most relief and assumes his characteristic pose. Thus the first symptom noticed in a destructive process of the sixth nerve would be an exophoria caused by the inflammatory stimulation. This possibly might be followed by a short period of e x t e r n a l strabismus. When the destruction of the nerve is complete, however, the paralysis of the external rectus will result in an internal strabismus. It is during the various stages of this destructive process that the patient may get relief by carrying his head so that he is able to look to one side.

Modern methods of diagnosis and treatment have greatly reduced the incidence of acute ocular syphilis. Dr. Hans Barker of San Francisco reports, in the California and Western Medical Journal of July, 1936, that such clinical material was abundant 25 years ago. Today he finds it difficult to demonstrate cases of syphilitic iritis, papillitis, or fresh chorioretinitis to the Stanford medical students. Even interstitial keratitis is decreasing in frequency. If acquired syphilis is adequately treated we may expect uveal tract involvement in about four per cent during the secondary stage, if inadequately treated the expectation increases to eight per cent.

Choroiditis is often a very disabling disease, especially if the lesion is in the macu-

lar region, in which case, central vision is lost. When syphilis is the causative agent, there is an associated retinitis. The fresh lesions have hazy, poorly defined, buff colored borders, and are produced by an infiltration of leucocytes with a throwing out of exudates. As the disease becomes chronic, the exudates are absorbed, the choroid and retina become atrophic over the diseased areas, pigment migrates from the choroid to the margin of the lesions, and contrasts sharply with the white sclera below. These scars remain as a permanent record. The lesions may range from the salt and pepper type to the larger sharply outlined atrophic spots resembling retinitis pigmentosa.

Since degenerative changes in the brain closely parallel those in the eye, one is able to look at a case of choroiditis and visualize a similar condition that may be taking place in the brain. Treatment may cause these exudates to be absorbed, but if the brain cells are destroyed they never regenerate. Some part of the mental symptoms of a paretic may be caused by the infiltration of leucocytes with the resulting inflammatory exudate. As the exudate is absorbed under the influence of treatment, mental improvement results only in so far as the symptoms were caused by the exudate. The patient does not regain that mentality lost by destruction of nerve tissue.

The vitreous may be involved, being filled with many dust like particles in contrast to the larger opacities found in association with other causes. Yet do not be deceived, syphilis may be the cause also of some of the larger opacities.

Subjectively, there is no pain unless the iris or ciliary body is involved. Objects may appear distorted because of the uneven surface of the retina, and flashes of light may appear because of retinal irritability. Scotomas are present corresponding to the involvement.

Because choroiditis and associated lesions are frequently caused by diseases other than syphilis, the ophthalmoscope is not a reliable means of differential diagnosis. Laboratory help is essential.

In 1869, Argyll Robertson, a Scotch physician, published a paper entitled "Four cases of Spinal Miosis with Remarks on the Action of Light on the Pupil." In his remarks he named five points which he said were characteristic of this phenomenon; namely, (1) The retina is sensitive to light. (2) The pupils are miotic and (3) do not react to light, but (4) react readily to accommodation and convergence, and (5) they dilate imperfectly with atropine. This phenomenon has been called the Argyll Robertson Pupil in honor of its discoverer. Dr. Robertson also stated that pupils conforming in every particular to this description are peculiar to syphilis. Since that time many others have found similar reactions differing only in regard to the size of the pupil. Believing that the two similar reactions should be classed together, they have insisted on cataloguing them with the Argyll Robertson pupil. Dr. R. Lindsay Rea of London defines the Argyll Robertson pupil as one with an absence or *gross diminution of the reaction to light*, but with the preservation of the reaction to accommodation and convergence. Others continue to insist, however, on the original definition. From my search of the literature, I believe the majority of writers are agreed that the definition as now accepted does not restrict the size of the pupils. Those who dogmatically state that it is diagnostic of syphilis usually insist on the definition as originally stated by Dr. Robertson. What constitutes a miotic pupil is another point where agreement is lacking. Some writers contend that to be classified as miotic a pupil should be two mm or less in diameter; others are willing to accept a three mm pupil as miotic.

There is likewise much controversy over the site of the lesion that produces the Argyll Robertson pupil. It is believed by some to be in the ciliary ganglion; by others in the cervical cord. The weight of evidence seems to indicate the location to be in the mid-brain somewhere near the nucleus of the third nerve; but many writers feel that it cannot be definitely located. Bernheimer's chart is an excellent aid in localizing many nerve lesions affecting the eye.

In support of the opinion that the lesion is located somewhere near the nucleus of the third nerve, we might say that since the pupil is active to accommodation and convergence, the efferent part of the arc

must be intact. The site of the lesion therefore would seem to be in the afferent pathway. Since vision is not disturbed, the lesion must be located in the afferent reflex fibers after they have separated from the visual tract. The reflex fibers leave the visual tract near the external geniculate body and travel to the nucleus of the third nerve by a route, the whole course of which has not been determined. Fibers from the third nerve complete the reflex arc. If miosis is present it must be either paralytic or spastic. Since it continues for a long period of time, the spastic type can be ruled out, and we are safe in saying that the contracted pupil is caused by a destruction of the sympathetic nerves which supply the radiating or dilating muscles of the iris. Since the afferent pupilomotor fibers, or those fibers that carry the light stimulus to the nucleus of the third nerve, and the sympathetic or pupilodilator fibers run together for short distance in the mid brain near the nucleus of the third nerve, it is conceivable how one lesion in this location would produce both a miosis and a reflex iridoplegia.

Before the discovery of the Wasserman reaction in 1907, clinicians were inclined to assign syphilis as the cause of many obscure conditions. This disease was blamed for many things of which it was not guilty. If the physician was unable to find any other cause, syphilis was a very convenient diagnosis, and no one could disprove it.

All of you remember the old saying "When in doubt give KI." Since the discovery of the Wasserman reaction we have of necessity abandoned the habit of ascribing syphilis as the cause of all obscure pathology. The present day laboratory procedures help us not only to confirm or deny the presence of syphilis, but they help us to diagnose many other diseases. We may discover, by use of the X-ray, an abscessed tooth or an infected sinus that is causing the disease, when previously syphilis would have received the blame. For this reason, many of the observations concerning the Argyll Robertson pupil made before the development of the Wassermann test are of doubtful value.

While all are agreed that the Argyll Robertson pupil is found more frequently in syphilis than in any other disease, all are not agreed that it is found exclusively in syphilis. Observations made over a period of years have found this phenomenon in (1) epidemic encephalitis, (2) multiple sclerosis, (3) cerebral tumors, (4) syringiomyelia, (5) chronic alcoholism, (6) traumatism, (7) cerebral hemorrhage, (8) arterio-sclerosis, (9) diabetes, and (10) Freidreichs disease. Any thing that will produce a lesion in that vulnerable part of the brain will produce an Argyll Robertson pupil.

Treatment of syphilis no matter where the focus of infection is found, is for the most part systemic. It must be remembered that each patient may react differently to treatment, and no hard and fast rules can be made. Because of the delicate mechanism of the eye, a Herxheimer reaction, following large initial doses of arsenicals, may prove disastrous to vision. Treatment should commence with bismuth or mercury, preferably bismuth; and after a few doses of this, one may begin with small doses of a trivalent arsenical. This may be given in gradually increasing doses along with the bismuth for a period of 20 weeks. At the beginning, the treatment should be given at shorter intervals and the length of the interval increased as the size of the dose is increased. The maximum dose can be reached usually within three or four weeks. When the eye becomes quiescent, the remaining treatment should be considered from the standpoint of the body as a whole.

When there is even the slightest possibility that the existing eye disease could be caused by syphilis, a blood test should be made. If the disease is of the degenerative type, a test of the spinal fluid should be made without fail. The presence of a positive Wasserman test does not mean necessarily that the eye lesion is caused by syphilis. Infected teeth, tonsils, and sinuses should be searched for, and if found, cared for as though they were the cause of the disease. In addition to this treatment of syphilis should be instituted at once. In case operative interference is advisable it is well to postpone it until the patient has had sufficient anti-luetic treatment to render him a safe operative risk.

The ophthalmologist should not regard the eye as an isolated organ, but as an integral part of the body influenced by the general health of the patient. It is his

duty to society in general and to the patient in particular, to diagnose those systemic diseases whose signs may be manifested in the eye. The first evidence of neuro-syphilis is frequently discovered in the eye, therefore we owe it to our patients to diagnose this condition before irreparable damage is done.

If the campaign against syphilis is to be successful it must be twofold; first, the spread of the disease must be prevented; second, those having the disease must be discovered and treated. A high percentage of those afflicted are unaware of the fact. Some know they have been infected, but they have taken a few shots and have been told they were cured. Having unlimited faith in their physician, and being blissfully ignorant of the dangers of the infection, they have been coasting along through life believing themselves cured. As a result of this belief they frequently deny a previous infection, because they think their past is none of our business. Others having a mild lesion have failed to consult a physician, and therefore never have been aware of their infection. There are still others who have been treated for an innocent appearing sore by a well meaning but misguided druggist. Syphilis of the innocent is not uncommon. No one, regardless of his station in life, should be above suspicion. The one who is least suspected is frequently the one who is most neglected, because family physician and specialist alike take it for granted that he is free of syphilis.

I wish to urge that you become syphilis conscious, that you think of the probability of syphilis as a causative agent in obscure conditions. WHEN IN DOUBT MAKE A WASSERMAN.

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Syphilis and Public Health*

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In public health discussions the subject of syphilis is usually presented only as one of venereal disease. A program designed as control of syphilis is usually designated as a venereal disease program. However, the actual procedures of most venereal disease programs are concerned chiefly with syphilis. Syphilis is probably the major public health problem of today.

In an absence of specific vaccination against the disease, it would appear that syphilis control must depend upon systemized social action. The particular factors that make it necessary for society, prob-

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ably through government, to take this action are as follows:

1. Syphilis is a communicable disease.
2. It affects a large proportion of the population, not only those exposing themselves with the carelessness characteristic of human beings.
3. The cost for treatment of syphilis is greater than can be borne by most of the individuals that have it.
4. That these people caught the disease through their carelessness and violation of the moral code from a public health standpoint is entirely out of the question.
5. Public health education is essential to the necessary syphilis control program, and public health education can be brought about through careful planning and continuous effort.
6. In other countries, notably in Sweden, systemized action has produced satisfactory results.

Mortality figures give no indication as to the magnitude of this problem. Certainly the 12,000 deaths reported as being due to syphilis in the United States in 1935 cannot be considered as an actual number of deaths which occurred during this year. Perhaps the reason for this is that unless syphilis stands out clearly as the cause of death, it is not likely to be reported by the physician. The disease rarely causes death during its early and easily recognizable stages. The disease is frequently diagnosed as something else. Many physicians fail to take routine Wassermans on general examinations.

It is said that the public does not like to hear or talk about anything connected with syphilis. In my own experience in initiating this program in Oklahoma, I do not think this is true. The public appears to be quite interested in it and willing to hear and talk about it, but it is not willing to be embarrassed or incriminated. Unfortunately, however, the public has obtained rather an amazing mass of information about the disease. The average layman is more likely to be afraid of toilet seats and drinking glasses than of casual exposure. He is more likely to think of syphilis in terms of a "sort of rash" than of a long continuous chronic infection. Before sound information can be conveyed to the public, this misinformation must be gotten rid of.

The objective of the State Health Department of Oklahoma is to put the consideration of syphilis on the same basis as that of any communicable disease. The individual member of society may as the result of observation of moral code, or because of having received instructions in sex protection himself on syphilis, and this is helpful from the standpoint of the public health program.

On the other hand, health agencies have not in the past been successful and there is no reason to believe they will be more so in the future in attempting to bring about syphilis control through a moral approach, or one based upon sex hygiene information to individuals. Syphilis is a communicable disease and on this basis must the program be subjected and carried out.

Up until the past two years the means of approach was very questionable. Broadcasting stations would not allow this subject to be discussed on the air. A few of our leading newspapers carried small editorials about syphilis, but most of them dared not discuss the problem openly. But today the subject is discussed in most of our newspapers, in pulpits, civic groups and discussed freely over the radio. This has largely been accomplished through the efforts of the Surgeon General of the United States Public Health Service, Thomas Parren.

During my 14 years experience in Public Health work, I have formed several firm convictions. First, that syphilis is easily the most prevalent of the major communicable diseases. That directly and indirectly it cost the taxpayer more than any other infectious disease. That there are already available weapons with which it might be partially if not entirely stamped out, and so reduced to a minor problem. That though these weapons have been available for a decade or more, we are progressing not forward but backward. Syphilis in this country is increasing, not decreasing. The blame for this, in my opin-

ion, is largely due to failure of the physicians to report those cases with which they come in contact. Many of our hospitals and clinics report only the acute cases of syphilis and disregard altogether the chronic cases. A few of the states are sufficiently equipped with trained personnel to check the sources of contact and source of infection, which, I think, is one of the primary factors in ridding the country of this disease. The irregularity in treatment is perhaps the greatest weakness in the handling of known cases of syphilis. Personally, I think, this is due to the following: First, the individual is mislead by his improvement after a little treatment, and if he has to pay for this treatment is quite likely to discontinue as soon as he feels better or the sore and rash disappear. Second, when the individual discontinues treatment, it is not always possible for the Health Department to locate him, even though he has a name and address on the date of his original report. Third, actual prosecution for failure to continue treatment until the infectious stage is passed is so unusual as to make it a personal persecution. If an individual is finally carried to court the prosecution must be prepared to prove that he, or she, is in an infectious stage. Unless there is a visible evidence of syphilis, the judge and jury are not likely to give serious consideration to the defendant's potentiality of infecting others. The health officer will naturally be guided by the law under which he is operating, with the character of the case in question, and by his own common sense. Prosecutions are unusual except with the prostitutes. Most of our states have laws, whereby ample drugs are furnished for those individuals who have syphilis, and are unable to pay a private physician for treatment.

Though a case of syphilis is less dramatic to the public than a case of diphtheria and from society's standpoint disgraceful and to be condemned, at present there is greater necessity for making these drugs easily available than supplying diphtheria antitoxin or toxoid. The rural health officers distribution of this material depends largely on the policies of the State Health Department, or upon the local Health Department and supplies available.

I consider syphilis the most urgent public health problem in this country today. In the first place, so many people have it and when this disease is untreated, or not properly treated, these results are dangerous to them and costly to the community. In the second place, it is contagious. In its untreated earliest stage, each person who has it is dangerous to those with whom he associates and, finally, syphilis tops the list of public health problems, because we know how to be rid of it, yet we are doing very little about it. The whole health problem in the control of syphilis comprises two main elements. First, every infected person must take treatment and, second, facilities for diagnosis and treatment must be made freely available. First and foremost is the need of adequate facilities for diagnosis and treatment. This method has been the backbone of European control.

Knowing the method for control, we have but to proceed with our campaign intensively. Contributions to effective treatment have been made in many instances. The cooperation and proper attitude of the various components of the medical profession, plus free and complete education of the general public, will help considerably in the solving of our problem of venereal infection.

Treatment for every person needing it is available and can be arranged for irrespective of the individual's circumstances. The State Health Department does not sponsor free clinics, but exercises every effort to see that every case receives proper and full attention.

Why is it then that scientific treatment is not utilized by everyone who is so unfortunate as to contract venereal disease? Many who should be under treatment are quite ignorant that they are infected, some who do know that they are infected are ashamed to admit it and therefore receive care usually from quacks. This is the direct result of the wide-spread belief that nice people do not have it, and that nice people should not have anything to do with those who have syphilis. There exists the foolish notion that the disease is a "mark of guilt" and therefore that the victims deserve what they get. This destructive attitude is all the more unchangeable be-

cause it is so utterly false. Not every sufferer of syphilis is guilty of anything except misfortune.

Although the U. S. Public Health Service has a national program of venereal disease control, there is a tendency on the part of that unit to rely upon the different states to initiate programs in accordance to their own judgment and to fit their particular needs. In this state a test has been made along these lines by contacting County Medical Societies and outlining to them our state policy of desiring that patients with syphilis, or venereal disease of any type, are to be treated by their own doctor. To this end we have set out to educate the people on the hazard of venereal infection, and what part these infections play in social life.

Upon request, the state furnishes any physician with the necessary arsenicals, mercury and bismuth, and any such other drugs as are needed. Therefore, we must make known throughout the land the knowledge which we have and our willingness to dispense it liberally in order to prevent injury to countless people having a disease which modern science can control.

We cannot escape the following facts:

1. There are at least six and one-half million people in the United States that have syphilis.
2. Two per cent of the children of the nation have congenital syphilis.
3. It is responsible for 15 per cent of all blindness.
4. Syphilis causes at least 10 per cent or 15 per cent of all the known types of insanity.

Lastly, it has been estimated that the cost of caring for and treating all of our veneral disease patients in the United States is in excess of three billion dollars.

The Management of Early Syphilis*

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The subject of early or acute syphilis is very extensive. This paper will be confined to a resume of findings and recommendations of the Cooperative Clinical Group as outlined by Moore followed by a discussion of some of the difficulties encountered in the effective treatment of early syphilis.

Under early syphilis is included not only primary and secondary syphilis but early latency of less than four years duration. In other words the term is used to denote those infections where there is favorable chance for complete or biological cure under continuous, intensive treatment.

The principles of treatment of early syphilis according to Moore are:

1. The aim of treatment is radical cure.
2. Study of the patient before treatment to determine
   a. Complications of syphilis
   b. Other complicating diseases
   c. Base line physical findings, to compare with subsequent examinations.
3. Examine contacts.
4. To secure maximum treponemicidal effect, use
   a. Old arsphenamine (606) in place of other arsenicals
   b. Bismuth in place of mercury.
5. Treatment must be continuous—no rest periods.
6. Use the arsphenamines and heavy metals in alternating courses—not in combination.
7. Utilize serologic control — blood

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Wassermann and cerebrospinal fluid to determine duration of treatment.

8. Prolong continuous treatment for one full year after blood Wassermann and cerebrospinal fluid become and remain permanently negative.
9. Follow treatment with rigidly controlled year of probation.
10. Thereafter, follow patient for his lifetime with periodic physical and serologic examinations.

Scheme of Treatment

The treatment outlined by Moore consists of alternating courses of arsphenamine and bismuth. The first arsphenamine course consists of eight injections and subsequent courses six. The first bismuth courses comprises four injections given simultaneously with the first four arsphenamine injections. The second bismuth course of four weekly injections follows the first arsphenamine course and each subsequent course is increased by two injections, until a total of ten is reached. Seronegative primary syphilis requires four courses of arsphenamine followed by bismuth in alternation if the Wassermann is consistently negative whereas seropositive primary and early secondary syphilis should have at least five courses of arsphenamine. If neoarsphenamine is used Moore recommends 10 to 12 maximal doses 0.9 gram. The Wassermann reaction is recommended at the beginning and end of each course of arsenic and routine spinal fluid examination between the second and third courses of arsenic. During the year of probation monthly Wasserman reactions are recommended if possible and at least every two months. At the end of this year of probation the patient should have a complete physical and neurological examination, spinal fluid test and if possible, fluoroscopic examination of the cardiovascular stripe.

Moore gives the actual average duration of treatment in the various types of early syphilis as follows:

Seronegative primary syphilis — Nine months, provided the blood Wassermann remains negative throughout. If the blood cannot be examined at the time of each arsphenamine injection to rule out the presence of a provocative Wassermann a full year of treatment should be given.

Seropositive primary and early secondary syphilis — Fifteen to 18 months. Treatment should be continued for one year after the Wassermann becomes and remains negative. This reversal usually takes place at the start of or during the second arsenic course.

Delayed or late secondary syphilis — Eighteen months to two years.

Thomas Parran states that persistent and continuous treatment will produce the following percentage of cures:

In sero negative primary stage	86.4% of cases
In seropositive primary stage	64.3% of cases
In secondary stage	81.5% of cases

Thus it is obvious that the patient who has an early diagnosis as soon as possible after the appearance of the primary lesion has the best chance for a complete or biological cure. Darkfield examinations should be made on all suspicious lesions and in spite of negative findings the patient should be kept under observation until there is no doubt as to the presence or absence of syphilis. So many persons have used ointments or caustics before applying for examination that darkfield determination of the presence of treponema has been consistently fruitless and eventually serological tests establish the diagnosis. It is necessary to follow negative darkfields with Wassermann reactions until all doubt is removed. Some individuals, especially women, may have such slight secondary manifestations that this stage is missed and unless instructed to report back for rechecking at a specified time may be entirely ignorant of the existence of the disease.

Serological examinations are not made as frequently as they should be. All patients treated for gonorrhea should be carefully examined for primary syphilitic lesions and a Wassermann reaction employed at some time during the course of treatment despite absence of signs of syphilis. When a patient brings up the question of the advisability of serologic examination it is well to follow this through and secure the serologic test before the patient becomes indifferent to the possibility of a luetic lesion.

Difficulties Encountered in the Treatment of Early Syphilis

With the knowledge that continuous, persistent treatment affords a very good chance of cure it would appear that there should be little difficulty in clearing up most of these cases of early syphilis which come to us. This is, however, not the case. For every case that comes to me directly for treatment after diagnosis either in this office or elsewhere I have two or more individuals who have begun treatment elsewhere, usually under good men, and allowed themselves to neglect regular treatment or who have dropped all treatment entirely before securing anything like an adequate amount. These individuals will probably be a problem as long as syphilis is treated. They are concerned about their condition immediately after diagnosis, begin treatment, but soon lose all sense of the dangers involved and take advantage of the slightest excuse to postpone or discontinue treatment. I know of no way to handle this group other than to state that there is no short cut to cure and insist on the maximum treatment in hopes that they will have had at least minimal treatment before getting away.

Finances play an important part in the treatment. It is impossible to expect a patient to continue treatment when the charges are beyond his means but every patient has his financial level and when the treatment is adjusted to this he can take all the treatment necessary without undue financial strain. I am opposed to free treatment where the patient can pay even a small amount, since with no investment in the treatment he minimizes its value and tends to neglect seeing it through to completion.

Reactions are encountered at some time by practically all men treating syphilis. Probably the most frequent is the nausea following intravenous injections and while not important in itself frequently causes the patient to avoid treatment. Moore expects his patients to have some nausea in a considerable proportion of cases and tells them to anticipate and make allowance for it. I find it difficult to give the larger doses of neoarsphenamine to a considerable number of my patients who find the attending discomfort interferes with their work to such an extent that they lose time from their job and fear loss of employment. Changing from one brand to another or cutting down the dose frequently controls this. Some favor mapharsen, but in my experience I find practically the same reactions to that drug as neoarsphenamine although a patient may react to one and not the other.

Tuberculosis in the patient with syphilis complicates the picture and frequently only the heavy metals may be used with occasional patients who tolerate small doses of arsenic cautiously administered. Relatively good results are secured with bismuth alone and the individual not infrequently not only secures satisfactory reversal of the Wassermann but gains weight and improves in general health.

Where reversal of the Wassermann is delayed spinal fluid examination is important. The patient then may be treated with tryparsmide or fever therapy where indicated after increasing the amount of arsenic. Those patients who miss treatment during the first and especially the second course of arsenic are most apt to have neuro-recurrence.

Summary

Continuous intensive treatment produces favorable results in early syphilis, especially in the seronegative primary stage. Treatment should be continued without interruption for one full year after the blood Wassermann and cerebrospinal fluid become negative and remain permanently negative.

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Moore, Joseph Earle: The Modern Treatment of Syphilis.
Parran, Thomas: Shadow on the Land.

Summer-Time Use of Mead's Oleum Percomorphum

During the hot weather, when fat tolerance is lowest, many physicians have found it a successful practice to transfer cod liver oil patients to Mead's Oleum Percomorphum.

Due to its negligible oil content and its small dosage, this product does not upset the digestion, so that even the most squeamish patient can "stomach" it without protest.

There are at least two facts that strongly indicate the reasonableness of the above suggestion: (1) In prematures, to whom cod liver oil cannot be given in sufficient dosage without serious digestive upset, Mead's Oleum Percomorphum is the antiricketic agent of choice. (2) In Florida, Arizona and New Mexico, where an unusually high percentage of sunshine prevails at all seasons, Mead's Oleum Percomorphum continues increasingly in demand, as physicians realize that sunshine alone does not always prevent or cure rickets.

Mead Johnson & Company, Evansville, Indiana, invite you to send for samples of Mead's Oleum Percomorphum for clinical use during the summer months to replace cod liver oil.

Syphilis in Pregnancy*

F. A. DeMand, M.D.
OKLAHOMA CITY, OKLAHOMA

At the present time, when only lately we have had so much public education about syphilis, we find a considerable portion of the public rather syphilis conscious. But still, the surprise shown by some when in the routine antepartum examination a positive Wasserman is obtained proves the ignorance of the existing condition. Why, because no clinical evidence has shown itself. Cooke suggests that these mothers are free from clinical symptoms because they have acquired the spirochtaetal infections from their husbands through his semen. The spirochaeta have been lying dormant in the testicles from an initial early infection, and thus are transmitted to the mother to lie in some organ in an attenuated or dormant state and no clinical signs show themselves. Serologically, however, the existence of the disease may manifest itself.

The plea then, is for a routine Wasserman in each and every case. Only by such routine can we give the mother, and most particularly her child the best chance of survival. Only by a routine serological investigation can we hope to cut down the appalling number of infants dying in utero from the disease, and reduce the number of clinical cases manifesting themselves later in the child's life.

Most incidences of syphilis in children have been acquired congenitally and cases have been known where congenital syphilis has not shown itself serologically or clinically until the eighteenth year of the individuals' life.

A positive Wasserman in a mother should call for a test of the father and, also of any children born previously, to the couple. Many indeed, of the offspring will be found clinically or serologically positive. The obstetrician can and should play a great part in the fight against syphilis. Twenty-five thousand fetal deaths a year, in the United States from syphilis, is too high, and the observant pains-taking obstetrician is the one to reduce this number.

Three to four per cent of syphilis in the country today has been acquired congenitally. The early diagnosis of syphilis in pregnancy is imperative. In a group of cases in which the mothers were known to be syphilitic and received no treatment, 17 per cent of the children came through unscathed. Whereas, 83 per cent were either aborted, stillborn or born with some congenital defect or serologically or clinically positive.

Colles law states that a woman may carry a luetic child and become immune to syphilis herself and remain so. Profetas said that a healthy child can come from a luetic mother and be immune from syphilis. Syphilologists today claim that all children from syphilitic parents and all parents of syphilitic children are infected and that the disease will become manifest sooner or later. An occasional case will support the theory of direct infections of the child by the father, the mother escaping. However, the majority of these mothers observed over a period of time will be found later to have developed positive clinical or serological evidence of the disease.

The mode of transmission of the spirochetes from the mother to the child is by way of the placenta. Therefore, syphilis thus acquired by the child is congenital and not hereditary. When the initial infection of the mother is acquired at the beginning or during pregnancy, the extensive spirochetemia occurring during the primary and secondary stages of the disease always infects the placenta and then the fetus. Transmission is dependent on active spirochetes in the mother's blood stream. There are transient periods of spirochetemia in cases of latent lues, and

*Read before the Section on Obstetrics & Pediatrics, Annual Meeting, Oklahoma State Medical Association, Muskogee, Okla., May 10, 1938.

these periods of spirochetmia become less frequent as time passes on, but if at any time during a pregnancy a period of spirochetemia occurs, then the fetus becomes infected. Single spirochetes may pierce a vessel wall and enter the blood stream of the fetus without producing visible defects in the placenta. When, however, large numbers produce a rupture of the blood vessel walls, then we find the resultant infarcts in the substance of the placenta. The old contention that the placenta acts as a filter, so to speak, against the infection reaching the child from the mother, is at present discredited.

Spirochetal manifestations in the fetus depends upon two factors. First, the duration of the mother's syphilis and second, the stage of development of the fetus. If the infection of the mother takes place a short time before conception the fetus is almost certain to die in utero. The longer the mother has had syphilis before conception, the more probable is the birth of a still-born child, a macerated fetus, a premature child or a living child with latent syphilis.

The diagnosis of syphilis in pregnancy is many times rather difficult. As to its incidence, it is found on the average of six per cent in clinical cases and one per cent in private cases. In the majority of cases, 82 per cent, according to Zangmeister, there are no clinical symptoms of syphilis in pregnancy. This tallies fairly well with the figures found in the non-pregnant state. In the remaining 18 per cent however, where definite manifestations of the disease exist, we can note certain variations. Generally speaking, all local syphilitic lesions are more marked in pregnancy because of the increased vascularity of the pelvic tissues. Chancres take longer to heal, and there is a tell-tale induration of tissues and lesions present. Diagnosis should usually not be diffcult especially when lesions are presenting themselves in the cervix during pregnancy, for the normally soft cervical tissues contrast so clearly with the luetic induration. Cervical chancres are usually of the erosive type, being oval in shape and forming fissures which radiate toward the cervical canal. In color they appear redder than the surrounding bluish tissues, are friable and bleed easily. The dark secondary manifestations undergo early suppuration. Eroded papules develop rapidly, undergo progressive hypertrophy and often constitute veritable granulating tumors, which invade and deform the entire vulva.

Opinions differ as to the effect of syphilis on the general condition of the gravida. Moore and Solomon express the view that pregnancy, through metabolic changes, in a large measure protects the central nervous system from the spirocheta and lessens the severity of syphilis as it affects the patient generally. Davies holds that aggravation of the disease in pregnancy is the exception and pregnant women suffer less from systemic disturbances than non-pregnant women. It is known that in many cases, no evidence of syphilis is apparent during pregnancy. Its presence being diagnosed only when the new-born shows unmistakably its existence in the mother. Gellhorn states that he has yet to note in any syphilitic gravida, that exuberant feeling of good health, that blossoming out into intensified well-being, which we so often find in normal pregnancy. On the contrary, syphilitics often show aggravated subjective discomforts common to the pregnant state, and in addition, frequently complain of headache, loss of hair, insomnia, and neuralgias in various parts of the body. They are anemic, lose weight and have more or less persistent fever. Renal complications are not usually found while eclampsia is rare because syphilis usually causes premature termination of the pregnancy.

Some authorities believe that the Wasserman reaction of a pregnant woman cannot be relied upon with the same degree of assurance as otherwise. Moore reports three pregnant women with active secondaries, whose respective Wassermans were negative. Belding believes that in the blood serum of pregnant women the formation of anti-complimentary and non-syphilic fixation substances is eight times as frequent as in the non-pregnant women. He believes that the serum of pregnancy

has a tendency to become anti-complimentary.

L. Kolbe found the flocculation reactions of Kiss and Kahn particularly well suited for pregnancy cases in that the detection of latent syphilis was more frequent when they were used. Fordyse and Rosen do not consider a weakly positive Wasserman in the pregnant woman shortly before delivery as diagnostic of syphilis. The majority of syphilologists agree that a strongly positive blood in pregnancy, verified on repetition, as diagnostic of syphilis.

The labors of syphilitic women may be perfectly normal and differ in no way from those of healthy women. However, abnormal presentations are comparatively common, because of prematurity or maceration of the fetus. Such cases usually produce precipitate labors. On the other hand, full term labor with the child in normal position often shows weak uterine contractions. In some cases, cervical tissue changes from local lesions result in marked resistance to dilatation to the degree of actual dystocia, with marked tendency to cause deep lacerations at delivery. If a syphilitic granuloma is present, it may cause enough obstruction to block delivery, while condylomata lata usually cause such friability of the perineum that it tears like wet blotting paper. Some authorities insist that repairs in syphilitic women should not be done primarily, but be allowed to heal by granulation and repaired later after successful anti-luetic treatment. Of the more rare complications encountered during luetic labor may be mentioned rupture of the heart, aneurism of the uterine artery and exhaustion of the adrenal system with fatal result.

It is unnecessary to urge that early, energetic, systematic and more or less continuous anti-luetic treatment must be the rule throughout the full term of pregnancy, for only thereby, can we hope for the survival of the child. It was formerly thought that the greatest loss occurred during the first four months of the fetal life. Now it is known that most deaths occur after the sixteenth week. From then on the child's life is in constant danger. The tremendous toll of infant life, which syphilis exacts is appalling. Some authorities found that habitual abortions accounted for 20 per cent. Late abortions and premature births of macerated fetuses occur in more than 60 per cent of the cases. Only 15 per cent of infected children reach full term. Of these 67.5 per cent either are still-born, or die within the next few days. It is evident that the earlier in pregnancy treatment is instituted the better chance the child has of surviving. However, no matter how late in pregnancy maternal syphilis is recognized, intensive, systematic treatment must be given.

Dr. Soule suggests the following outline of treatment for luetic pregnancy. Make an attempt to administer as vigorous treatment as the mother will tolerate safely. Prenatal care must be given weekly through the duration of the treatment with special attention to urinalysis and blood pressure readings. If nephritis appears, treatment must be postponed temporarily at least. Give weekly injections of .15 gm. neoarsaphenamine gradually increasing the dosage to .3 gm. or .45 gm. From nine to 12 such doses are given consecutively. A few days following each intravenous of bismuth injection, starting about the third or fourth week, an intramuscular injection is given, and continued for four weeks following the last dose of Neo. If the patient tolerates the treatment well, the above routine is repeated at once or after a short interval. An attempt should be made to so calculate the treatment that the patient arrives at term under neoarsaphenamine alone on the basis that the arsenicals are less irritating to the kidneys than the compounds of bismuth. Eighteen weeks of treatment is considered a reasonable course of treatment to protect the life of the child.

Most authorities insist that the maximal amount of neo per dose should not be over .3 gm. to .45 gm. The treatment should be mild and light, but continued the maximal length of time and more or less continuously.

Latent and Somatic Syphilis*

JAMES STEVENSON, M.D.
TULSA, OKLAHOMA

I. — LATENT SYPHILIS

Following the acute symptoms of primary and secondary syphilis, there is, in the otherwise healthy individual, a period when the immunological resistance factors of the body temporarily or permanently balances the virulence of the invading organism. That syphilis is often a benign disease was first emphasized by Bruusgaard, who studied a fairly large group of syphilitics who had never received any treatment. He found that 27 per cent of these people had apparently completely eliminated their disease by their own powers of immunity.

The clinical diagnosis of latency can be made only when the cerebro-spinal fluid is normal, and a careful physical examination reveals no lesions attributable to syphilis. Such an examination should include:

1. Cardio-vascular system, including X-ray for aortic enlargement.
2. Fundus Oculi.
3. Viscera.
4. Nervous system.
5. Osseous system.
6. Mucous membranes. (Occasionally, as O'Leary observes, leucoplakia may be the only clinical evidence of active syphilis.)

The only evidence on which to base a diagnosis of latency are the positive blood serology, a clear history of infection, a necropsy, or the birth of a syphilitic child.

Cannon, Stokes and Busman, and others, believe that a positive serology means an active infection, and the observations of Warthin also bear out this point. Practically, however, many people with a positive Wassermann live to a ripe old age without showing clinical complications. It seems probably true, that in many such patients, that the immunological mechanism is so effective, that while microscopic damage may be done, it is so insignificant that no clinical symptoms arise. The report of the Cooperative Clinic group emphasizes the observations of Bruusgaard. They found that if a group of latent syphilitics were observed for ten years the results would be as follows:

1. Spontaneous cure, 25 to 35 per cent.
2. Wassermann fasts, 25 to 35 per cent.
3. Late syphilis of skin, mucous membrane, or bones, 10 to 15 per cent.
4. Cardio-vascular syphilis, 10 to 15 per cent.
5. Syphilis of central nervous ssytem or viscera, 1 to 3 per cent.

The number of latent syphilitics is constantly increasing, due to the routine use of the blood Wassermann and other serological tests in hospital, industrial, and private practice. Today, the treatment of this type of patient confronts the physician nearly as often as the treatment of him with early syphilis. The patient is interested in his prognosis. The spinal fluid examination is of great value in this connection—in latent syphilis a normal spinal fluid means that neuro-syphilis will almost never develop. If the spinal fluid becomes positive, neuro-syphilis is probable.

In the treatment of latent syphilis, the golden rule is to treat the patient and not the Wassermann reaction. In the early years of latent syphilis the arsenicals may be used liberally, and in the later years, sparingly. O'Leary states that in latent syphilis more than four years old, bismuth should be used largely. In women with latent syphilis the possibility of pregnancy complicates the problem of treatment. In cases of pregnant women with late latency, 17 per cent result in syphilitic children. In such patients, treatment may be as vigor-

*Read before the Section on Genito-Urinary Diseases and Syphilology, Annual Meeting, Oklahoma State Medical Association, Muskogee, Oklahoma, May 11, 1938.

ous as the physical condition would warrant.

It is known that nearly all the serious sequelae of syphilis are clinically manifest 12 to 18 years after the primary infection. A patient past this period, with latent syphilis, may be "paroled," without treatment. His positive Wassermann may be ignored, if he reports annually for physical examination, especially of the cardio-vascular system.

In conclusion, one may be reasonably optimistic regarding the future of a patient, if he reaches the latent stage, even if inadequately treated, if he shows no tendency to clinical relapse, and if his spinal fluid remains normal. Such a patient's death certificate will not be adorned with the word "syphilis."

* * * *

II. — SOMATIC SYPHILIS

Stokes believes the routine use of the Wassermann test in young adults with bone, joint and muscle symptoms would reveal a considerable number of cases of early syphilis. While the characteristic features of the bone changes in early and recurrent syphilis is nocturnal pain, exaggerated by heat, and relieved by movement of the affected part, these are not at all constant. The diffuse headache of the secondary stage is due in part, probably, to bone changes, as are the sternalgia and pleurodynia. Early syphilitic periostitis is not uncommon, involving chiefly the long bones, especially the tibia. This is a localized process, usually recognized by palpating an extremely tender elevation of the bone.

Probably few syphilitics escape some pathological changes in the osseous system in the course of their disease. The roentgenological studies of the bones in pre-natal syphilis of McLean, and Pendergrass, Gilman and Castleton, suggest that in the future more careful X-ray studies of the bones will be made in acquired syphilis. McLean, in his classical article, gives a number of roentgenological pictures practically pathognomonic of pre-natal syphilis. In this aspect of the disease osteo-chondritis (i.e., lesions at the diathyso-epiphyseal junctions) is the typical pathological finding in the first few months of life. Later periostitis, osteo-myelitis, and Parrot's pseudo-paralysis may be found. In later childhood bone manifestations most often occur between the fifth and twelfth year, involving usually the tibia and ulna. While in infancy osteo-periostitis affects mainly the ends of long bones, the tendency here is to involve chiefly the shaft, probably because trauma plays an important role in selecting the site for the pathological changes. There is some pain, often nocturnal, in these cases, often described as "growing pains," but comparatively little functional disability. Later an osteo-myelitis may develop, but more often the typical bone deformities, such as the markedly bowed saber tibiae. Clutton's joints are highly characteristic of pre-natal syphilis, and this symptom is notably associated with interstitial keratitis. Clutton's joints, usually involving the knees or elbows, is a symmetrical, painless, chronic synovitis, with almost no functional disability.

Neisser found the spirochoeta pallida in the bone marrow within a few hours after it had entered the body. Bone syphilis may, therefore, be considered an early infection of the medulla, later spreading by the blood vessels in the Haversian Canals to the cortex and periosteum. The extent of the pathology then depends on the virulence of the organism and the resistance of the bony structure. The young, actively growing bone of infants and young children is naturally less resistant to all types of infection than adult bone, and it follows that the osseous pathology in pre-natal syphilis is much more severe than that which occurs in acquired syphilis. The changes that occur in bone in syphilis, as in osteo-myelitis are preponderantly constructive, that is, there is a tendency to new bone formation, while in tuberculosis and malignancy the tendency is towards bone destruction. By keeping this fundamental pathology in mind, the roentgenologist is frequently of great aid in diagnosing bone and joint syphilis, and it is important to remember this, as the blood serology is not invariably positive.

The treatment of skeletal syphilis yields satisfactory results in 90 per cent of cases if arsphenamine and bismuth are used for at least a year. In early cases the treat-

ment should be continuous, but in very late cases such as a tibial osteo-myelitis rest periods to increase the general resistance is better. In lesions of the palate and nasal septum great resistance to treatment is often encountered, and after thorough use of arsphenamine and bismuth, mercury and iodides may need to be used for years. There are certain lesions, notably gummatous osteitis of the skull, osteomyelitis of the long bones with sequestra, and the charcot joint which will require the assistance of surgery.

Contrary to prevalent opinion, syphilis has little or no deleterious influence in the healing of fractures. The reason for this harmonizes with the pathology before discussed — bone responding to syphilitic infection by bone production. Even in the case of gummata accompanying the destructive process, there is always also active reproduction.

New Director of State Health Laboratories Announced by Dr. Pearce

We wish to announce that we have secured the service of Wm. D. Hayes, Dr. P.H., as director of the State Health Department laboratories.

Doctor Hayes is an outstanding man in laboratory work having been director of the laboratories of the State Board of Health in Kentucky; president of the State Board of Health of Iowa for two years; director of the State Board of Health Laboratories of Florida; member of the State Board of Health of Iowa for six years; director of laboratories City of Sioux City, Iowa; assistant bacteriologist for the State of Iowa; taught in medical school in Iowa and taught hygiene and sanitation while connected with the laboratory.

We are very fortunate in securing a man of Doctor Hayes' ability to direct our laboratories and it is our desire that you use the State Laboratories at any and all times.

We have one central laboratory located at Oklahoma City and three branch laboratories, one at Tahlequah, one at Talihina and one at Elk City.

Chas M. Pearce, M.D.,
Commissioner of Health.

OBITUARIES

Doctor James C. Reynolds

Dr. James C. Reynolds, 57 years of age, pioneer physician of Frederick, died May 14th, following a short illness.

He was born January 1, 1881, at Fulton, Mississippi. After graduation from Fulton High school he attended Memphis Medical College, receiving his degree in 1904. Dr. Reynolds had lived in Frederick since 1920, when he moved there with his family from Wynn, Arkansas, where he had practiced for 17 years, after his graduation from Tulane University.

Dr. Reynolds is survived by his widow, one daughter and two sons.

Interment was in the Frederick Cemetery.

Books Received and Reviewed

MacLEOD'S PHYSIOLOGY IN MODERN MEDICINE, Edited by Philip Bard, Professor of Physiology, John Hopkins University School of Medicine, with the collaboration of Henry C. Bazett, Professor of Physiology, University of Pennsylvania; George R. Cowgill, Associate Professor of Physiological Chemistry, Yale University School of Medicine; Harry Eagle, Passed Assistant Surgeon, United States Public Health Service and Lecturer in Medicine Johns Hopkins University School of Medicine; Chalmers L. Gemmill, Associate in Physiology, Johns Hopkins University School of Medicine; Magnus I. Gregersen, Professor of Physiology, College of Physicians and Surgeons, Columbia University; Formerly Professor of Physiology, University of Maryland School of Medicine; Roy G. Hoskins, Director of Research, Memorial Foundation for Neuro-endocrine Research; Research Associate in Physiology, Harvard Medical School; J.M.D., Olmsted, Professor of Physiology, University of California; Carl F. Schmidt, Professor of Pharmacology, University of Pennsylvania. Eighth Edition, The C. V. Mosby Company, St. Louis, 1938.

This is the eighth edition of a well known book on Physiology. The greater part of the book has been entirely rewritten. There are nine contributors, including the editor. Each major subdivision is the work of a writer who is actively engaged in the study of some phase of the subject he treats.

Small type is used in the description of methods; for data judged to be of secondary importance to the student; for treatment of matters which are at present largely controversial; and for considerations which are chiefly of clinical interest.

The book is divided into nine parts: 1. The Neuromuscular and Central Nervous Systems. 2. The Special Senses. 3. The circulation. 4. The respiration. 5. The Physiology of the Alimentary Tract. 6. Metabolois and Nutrition. 7. The Endocrine Glands. 8. The Distribution and Regulation of water in the body. 9. The Kidney.

There are many fine illustrations throughout the book, totaling 355 in all. This book should be a welcome addition to any physician's or medical student's library.

Opportunities For Practice

Mr. Fred Fleming, City Treasurer, Oakwood, Oklahoma, advises there is an excellent opening for a young physician in his city. Oakwood is on Highway 270. This notice is published for the information of those who may be interested.

There is an excellent opportunity for practice in Odessa, Texas, and surrounding territory — in the heart of one of the largest oil fields in Texas. The closest modernly equipped medical office is 120 miles away in El Paso. A well qualified physician is needed badly.

The Lions Club at Wakita, Oklahoma (in Grant County), advises there is an excellent opportunity for a qualified young medical man to practice in that area. Wakita is about eight miles from the Kansas line and 37 miles north of Enid. The population of the town itself is about 500, but there is a large farming territory in the area which raises the available practice in population to treble that number.

Anyone interested should communicate with Mr. R. H. Guthrie, Secretary of the Lions Club, Wakita, Oklahoma.

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DR. L. S. WILLOUR.....Editor-in-Chief
McAlester, Oklahoma

DR. T. H. McCARLEY.....Associate Editor
McAlester, Oklahoma

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The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided request for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in The Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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EDITORIAL

Those who attended the Muskogee Meeting are certainly well repaid for their time and effort. The local Committee on Arrangements had everything properly synchronized and there was not a hitch in the entire program. Every courtesy was shown the visitors by the Muskogee profession.

The registration at this meeting was exceptionally good, there having been 430 doctors registered.

It was, of course, impossible to give to our exhibitors under the conditions at Muskogee, as good accommodations as we would have liked, however, every doctor who registered had to visit the exhibits, but it was impossible to make a loafing place as it might have been under different circumstances.

The Council, as you will observe from the minutes, which are published in this issue of the Journal, accomplished considerable work. They tried in every way to respond satisfactorily to the action of the House of Delegates and gave, I believe, a comprehensive report of last year's work. It appeared to be the consensus of opinion of the House of Delegates that the employment of a lay executive secretary is urgent and important. In fact, it is so urgent that the House of Delegates made a request that every County Medical Society contribute at least $5.00 per member to defray the expense of the executive secretary from now until the 1939 dues are paid, and then to continue his employment, the State dues were raised, by the unanimous approval of the House, to $12.00 per year, beginning January 1, 1939.

This is without question an important step and will mean much in accomplishing a more satisfactory understanding between the organization and the doctors of the State as well as between organized medicine and the laity.

Committee reports to the House of Delegates were quite complete and showed all Committees of the Association taking a very active interest in their respective duties.

There was, of course, some political talk and the consensus of opinion of the House of Delegates seemed to be that it is the duty of every doctor in the State to see to it that the officials, for whom he votes, are pledged to the support of the legislative program of the Medical Association. It is also the opinion that if this is done legislation, which will protect the health of our citizens, will be enacted and there will be no interference with the regulations governing the practice of medicine in this State.

The Scientific program was unusually good. Our guest speakers, Doctors Neff, Middleton and Ochsner, presented valuable material and their presentation was much appreciated by all who could attend these Sessions. Not only were these guests excellent speakers but they added much to the social and fraternal features of the meeting. We have received from them,

since their return home, very friendly greetings and expressions of appreciation of the treatment they were rendered by our Association.

The secretary has suggested several times that a change be made in the time of meeting of the House of Delegates so that the officers and delegates can attend the General Sessions on Tuesday morning. The suggestion is that the first meeting of the House be held the first day at 3 p.m. and the second meeting at 8 p.m. This would complete this part of the work the first day and leave the Delegates free to attend the Scientific Session the morning of the second day. What is your reaction to this change?

Next year we go to Oklahoma City and can look forward to another large meeting with many excellent features that Oklahoma City has to offer.

Editorial Notes—Personal and General

The Oklahoma City Academy of Ophthalmology and Otolaryngology held its last meeting of the season, May 31, at the Oklahoma Club.

There was no scientific program and the meeting was held in honor of Dr. E. S. Ferguson, Professor of Ophthalmology of the State University Medical School. Dr. W. Albert Cook was the guest speaker.

DR. HENRY TURNER, Oklahoma City, was guest speaker of the Jackson County Health Forum in Kansas City, Mo., Wednesday evening, May 18th. His subject was "The Facts About our Glands."

DR. E. A. CANADA, Ada, has been appointed on the surgical service of Bellevue Hospital in New York City for a period of three or four months.

DR. CHAS. ED WHITE, who has been in St. Louis for the past six months doing post graduate work, was the guest of his mother, Mrs. E. P. White of Muskogee, and attended the meeting of the Oklahoma State Medical Association in May. Dr. White returned to Muskogee the first of June where he will continue his practice.

DR. and MRS. W. J. WHITAKER, Pryor, have returned from Rochester, Minn., where Dr. Whitaker took post graduate work at the Rochester Clinic.

Dr. Hermon S. Major announces that Dr. Henry S. Millett is associated with him in The Major Clinic at 3100 Euclid Avenue, Kansas City, Missouri.

Dr. Millett received his degree of Doctor of Medicine at the University of Kansas in 1928, interned at the Kansas City General Hospital in 1928 and 1929 and was engaged in the general practice of medicine in Kansas City, Missouri, from 1929 to 1930. Following this, he was associated with Dr. T. Klingman in neurology and psychiatry at the Mercywood Sanitarium and St. Joseph Hospital at Ann Arbor, Michigan, from September, 1930, to March, 1932. Later he was Resident in neurology at the Neurological Institute, New York City, from March, 1932, to March, 1934. Assistant in neurology at Columbia University from March, 1932, to June, 1935, and at the same time neuropathology at Columbia University from September, 1933, until March, 1934. Assistant in neurology at New York University, New York City, on the neurological wards of Bellevue Hospital from March, 1934, to May, 1938. Assistant Physician at Brooklyn State Hospital from March, 1934, until May, 1938, and Instructor and Assistant Clinical Professor of neurology at the Long Island College Medical School, Brooklyn, New York, from September, 1936, until May, 1938.

Dr. Millett is a lieutenant in the United States Naval Reserve and is a member of the Metropolitan Psychiatric Society, New York City. He is married, has a little daughter-four months of age, and lives at the Locarno Apartments, 235 Ward Parkway, Kansas City, Missouri.

The Oklahoma Citv Clinical Society announces that it is joining with the Southern Medical Association of a great meeting to be held in Oklahoma City, November 15 to 18 inclusive. It is hoped you will be able to attend this meeting which will be the most outstanding medical conference in the history of Oklahoma.

The Oklahoma City Clinical Society will continue its regular annual sessions in the fall of 1939.

DR. JAMES STEVENSON, Tulsa, was appointed Councilor of District No. 6, filling the unexpired term of Dr. W. A. Howard, Chelsea.

DR. L. B. WOODS, Ardmore, has returned from New York where he has completed a post graduate course in Obstetrics and Gynecology at the New York Polyclinic Medical School and Hospital.

DR. L. H RITZHAUPT, Guthrie, was the guest speaker at the meeting of the Creek County Medical Society held at Bristow in May. His subject covered the legislative status of things medical, both state and national.

DR. and MRS. MERL CLIFT, Blackwell, are spending the next three months in Europe, with Dr. Clift doing post graduate work in surgery at the University of Edinburgh, Scotland.

The Hospital owned by Dr. Geo. H. Stagner, Erick, was destroyed by fire May 8th, while the doctor was attending the State Medical Meeting in Muskogee. Fire was said to have started when a hot water tank exploded in the basement. Fortunately there was no loss of life or patients injured.

The Clinton News announces that the State Board of Affairs opened bids, May 19th, on an estimated $30,000.00 project of remodeling the north building of the Western Oklahoma Charity hospital at Clinton.

Funds will be taken from a $60,000.00 surplus remaining after $115,000.00 was spent in acquiring the new institution from Dr. McLain Rogers, former owner, last December.

The extensive remodeling program, which will increase the capacity of the north wing to more than 100 patients and the total capacity of the hospital to more than 150 patients, is expected to get underway in early summer.

Dr. H. K. Speed, Jr., superintendent of the hospital, said he had not been informed officially of the Board's intention to do the work by contract but added he presumed the contract would call for installation of a new heating plant and laundry in addition to the remodeling.

DR. H. J. NELSON, Granite, and DR. J. M.

ALLGOOD, Altus, are attending the post graduate course at the Vanderbilt School of Medicine at Nashville, Tennessee.

TRANSACTIONS OF THE FORTY-SIXTH ANNUAL SESSION OF THE OKLAHOMA STATE MEDICAL ASSOCIATION, MUSKOGEE, MAY 9, 10, 11, 1938

THE COUNCIL
May 9, 1938, 3 P. M.

Meeting of the Council called to order by the President, Dr. Sam A. McKeel, with the following members present: Drs. McNeill, Speed, Fulton, Aisenstadt, Walker, Howard, Templin, Kuyrkendall and Willour.

The minutes of the meeting of the Council on November 3, 1937, were read by Dr. Willour and approved.

The matter of publishing Dr. Edward H. Ochsner's address was discussed and it was decided to give Dr. Ochsner the privilege of having it published by anyone he chose.

The bills receivable next presented to the Council, were gone over in more or less detail, the aggregate being $612.75; showing a decrease over previous years.

The matter of the balance, which Mr. Clearman claims, $164.64, was discussed by the Council and was allowed to carry over until the Auditing Committee had completed the audit of the Secretary's accounts. Action to be taken at the next meeting of the Council.

The Council next considered the expenditures of the Legislative Committee during the past year, the expense having been incurred as a result of the Initiative Petition No. 166 and the bills of the attorney, hand writing experts, et cetera, were gone over.

On motion of Dr. Willour, seconded by Dr. Howard, and which unanimously carried, an Auditing Committee was appointed, with Drs. L. C. Kuyrkendall, Chairman; E. Albert Aisenstadt, and O. E. Templin.

The proposition of employing a full time executive secretary was discussed by the Council and after going over the expense for the past year, taking into consideration the fact that $2,000.00 from this year's dues was paid on our indebtedness, and $2,000.00 being appropriated for Post Graduate Medical Teaching, it was thought that it would be impossible for the Council, under present conditions, to finance the employment of such a secretary, unless increased income could be obtained.

Dr. Pearce advised that the $2,000.00 for Post Graduate Medical Teaching had to be paid when due otherwise both the State Health Department and the Commonwealth Fund would withdraw their aid.

The proposition of selling our bonds, which are hypothecated, in order to liquidate a portion of our indebtedness was presented by Dr. Speed. This was discussed by Drs. Howard and Fulton and on motion of Dr. Fulton, seconded by Dr. Templin, it was decided not to sell the bonds at this time.

The Secretary presented the matter of financing the Journal and showed that our advertising income for the past year had exceeded the printing of the Journal by about $1,500.00. This being the first time that the Journal had been completely self supporting. It was also called to the attention of the Council that the Cooperative Medical Advertising Bureau had treated this Journal very fairly, giving us our full quota of national advertising. The Cooperative Medical Advertising Bureau has increased their rates and the Journal increased their rates to all advertisers and in view of this fact we have lost practically none of our advertising business.

Dr. McNeill discussed the cost of publication of the Journal and said he had consulted with five different publishing companies in Oklahoma City and found it impossible to obtain as good a contract as the present one.

Mead Johnson & Company had communicated with the Secretary and their communications were presented to the Council relative to the Council endorsing the picture "Birth of a Baby." The matter was discussed and it was finally decided, on motion of Dr. Willour, seconded by Dr. Aisenstadt, that decision be withheld until a showing of the film could be had. Carried by vote of 7 to 2.

The Council, having heard some criticism relative to the discharge of Jess Harper as executive secretary, recommended that in the report to the House of Delegates they be given the reason for this discharge—that reason being lack of funds with which to pay him.

On motion, duly seconded, the Council adjourned.

THE COUNCIL
May 10, 1938, 3 P. M.

The meeting was called to order by Dr. Sam A. McKeel, and the following were present: Drs. Aisenstadt, Fulton, Howard, McNeill, McKeel, Speed, Templin, Walker and Willour.

The question of raising money for the employment of a full time executive secretary, in compliance with the resolution adopted at the meeting of the House of Delegates, was discussed and their qualifications were considered, the probable amount necessary to finance their salary and expenses.

Dr. James Stevenson, Tulsa, who was a guest of the Council, discussed the work of a full time executive secretary in Tulsa County, as well as in the State of Kansas.

On motion of Dr. Willour, seconded by Dr. Walker, and unanimously carried, the President-Elect, Dr. Speed, was authorized to appoint a committee of three, the majority of them to be members of the Council, to accept applications and investigate applicants for this position of full time executive secretary. This committee to report back to the Council. The following were appointed: Drs. J. D. Osborn, Jr., Chairman; Phil M. McNeill, and James Stevenson.

Dr. E. Albert Aisenstadt, for the Auditing Committee, reported that the accounts of the Secretary were found correct and moved the audit submitted be accepted. Duly seconded, this motion carried unanimously.

On recommendation of the Auditing Committee, a motion was made by Dr. J. A. Walker, seconded by Dr. O. E. Templin, that in view of that fact that Mr. Clearman had received a check in the amount of $146.64, marked payment in full to date, properly endorsed by him, and inasmuch as the audit revealed excessive expense accounts during his stay in Oklahoma City, and inasmuch as no service has been rendered by him since the date of the above mentioned check, the Secretary is instructed to issue no additional checks on this account.

Motion carried by vote of nine to two.

There being no further business the Council adjourned.

HOUSE OF DELEGATES
May 9, 1938, 8 P. M.

The meeting called to order by the Speaker of the House, James D. Osborn, Jr.

Dr. Starry, Oklahoma City, moved that the reading of the minutes of the last meeting be dispensed with as they were published in the June, 1937, issue of the Journal. Seconded by Dr. Fulton, unanimously carried.

Dr. Fulton, Atoka, was recognized and said "Before we take up any business, I would like to call your attention to one thing. There is a member who is not here tonight and will not be here to-

morrow, although we have expected him, a man who has been a member of the Association in Indian Territory and of the Oklahoma State Medical Association for about 45 years. He has always been in attendance. He has been an active man. I am speaking of our friend, Dr. LeRoy Long, of Oklahoma City, who has had an attack of sickness, coronary thrombosis, I understand. I therefore move you that our Secretary be authorized to extend to Dr. Long our sympathy in his sickness." The motion was seconded and carried, and the Secretary sent a telegram of sincere regret to Dr. Long.

The Speaker then called upon the President, Dr. Sam A. McKeel:

"Mr. Speaker and Gentlemen of the House of Delegates I am the first man to have the honor of addressing the Speaker in this body for the purpose of making an address. This is a change in our State Association that I am sure will be very acceptable. My purpose in talking to you this evening is to inform you of some things that I would like to see done after my term of office expires.

Socialized medicine is being debated all over the nation—in the high schools, colleges and even in the Congress of these United States. I don't know the number of people that have called on me, students asking me to help them arrange or get up data on socialized medicine. Some of them are in favor and some against it. I do not feel that I am competent to discuss the question fully, but I am against socialized medicine or any other form of medicine that takes away from the doctor his individuality. I am opposed to State Hospitals scattered over the State, except for the care of the insane and the tubercular. Institutions are being advocated by every one of our law-makers. It is things of this kind I am opposed to, and I don't think I should raise my voice against a thing like that unless I felt I had something to offer in its place. I believe it would be better for the indigent sick and for the medical profession if a tax were levied in each County, sufficient to take care of the indigent in that County. I think it could be done with less taxation than it can be done to have a hospital in each district. I mean that we do owe it to the indigent sick to take care of them and we owe it to them to let them select the doctor who treats them. There is an old adage that 'beggars cannot be choosers.' That might be all right except for the sick, but I for one do not want to treat anyone that does not want me, even if I had a State appointment.

In view of this I have a resolution to present for your approval or rejection."

(This resolution was referred to the Resolutions Committee and never brought back to the Floor of the House of Delegates.)

Dr. Lealon Lamb, Clinton, then presented another resolution, which was referred to the Resolutions Committee and was not returned to the floor of the House of Delegates.

Dr. Ned Smith, Tulsa, then requested a report of the Credentials Committeee before any further vote was taken.

Dr. W. A. Howard, Chelsea, Chairman of the Credentials Committee, reported 71 Delegates present and voting.

On motion of Dr. McNeill, seconded by Dr. Aisenstadt, which carried unanimously, our State Health Commissioner was extended the privilege of the floor.

On motion of Dr. Fulton, Atoka, seconded by Dr. Cook, Tulsa, carried, Dr. James L. Shuler, Durant, was extended the courtesy of the floor.

The Speaker then ruled that a quorum would be 25 and then called Dr. H. K. Speed, for his address, who said, in part: "Dr. McKeel, if I do as good a job as you have done, I will be entirely satisfied. Gentlemen, I have never approached a job with as much concern as I do this. I feel that most of you are my friends. I had a job similar to this three years ago and I thought then being President of the State Medical Association would be about the best job in the world. I am going to expend every effort in trying to salve our trouble, because I believe there are as many different ideas and different views as there are members in this Association. I will listen to everybody's advice, and invite all of you to give me advice and I will take all I can take and disregard the rest, and hope there will be a friendly relationship when I leave this place. We have too many grudges in this Association. Let's get them out of our system. We are all medical men and have a job to do; we accomplished a little last year and most of you know what that job was, how it was outlined before we started. You didn't know who was going to carry out your wishes when you voted to do certain things. Those things were done seriously, and some have not been satisfactory. It makes no difference to me whether anybody is satisfied. I have committed no offence for which I am sorry. If I have been wrong it has been through ignorance and I have no apology to make. But, Gentlemen, let's forget all that has gone and try to accomplish something in the next 12 months. I am for organized medicine altogether. What you do with the hospital situation will be entirely satisfactory to me, because I am first, last and always for the best interest of my profession. It is my way of making a living.

I am going to ask you gentlemen in no uncertain terms to contact your candidates for office and see them before they go down to the capitol next January, so that our Legislative Committee will not have an impossible job before them. I beseech you, do not endorse any candidate or condemn any candidate without knowing his views first. We must be in position to expect a fair deal from anybody that might be elected to office. If we have several candidates in the different counties to represent us in the House and Senate I think it not unwise to put these gentlemen on the spot and see just where they stand on our proposed program. Had this been done previously we would not have had so much trouble with our Basic Science Law. I think it is our duty to our profession, to ourselves and to our state in general to try to get these gentlemen committed, and it is every man's duty to get behind this method of procedure."

On motion of Dr. Cliff Logan, Hominy, seconded by Dr. R. M. Adams, Hobart, an appeal was made from a ruling of the Chair as to presentation of resolutions, Dr. Logan insisting that the resolutions be discussed immediately by the House and not referred to the Resolutions Committee.

This motion, requiring two-thirds majority to carry, was defeated.

The report of the Council to the House of Delegates was then presented by the Secretary:

"The Council of the Oklahoma State Medical Association hereby submits its report to the House of Delegates as authorized by the Constitution and By-Laws of this organization:

"There has been much business to come before the Council at meetings during the past year, however, they have not been as frequent as in the previous year. The principal thing which has made it necessary for our meetings has been the work of the Legislative Committee, in their endeavor to defeat the Initiative Petition No. 166, which you all know would destroy our Medical Practice Act. The Legislative Committee has carried on as active a campaign as possible with the amount of funds available—as their report will indicate.

"At one meeting of the Council $2,000.00 annually

for two years, was appropriated for Post Graduate Medical Teaching, this to be used in conjunction with an appropriation from the Commonwealth Fund and money from Congressionally appropriated funds to the State Health Department, and we are delighted to see this work already inaugurated.

"The Council, in considering the appropriation, had reason to believe that much would be accomplished. FIRST, there would be an improvement in the practice of obstetrics throughout the state; SECOND, as the full time Instructor would be available to appear before lay groups, he would be able to 'sell' organized medicine to the groups of Oklahoma; THIRD, if the doctors see that the State Medical Association is really doing something to advance their professional interests, the membership of the State Medical Association would thereby be increased.

"The Council has heard some criticism from the membership because Mr. Harper was discontinued as executive secretary, and we feel that the House of Delegates is entitled to know that our reason for discontinuing his service was because we did not have sufficient funds to meet the expense.

"The Delegates will notice the fact that the Journal of the Association, during the past year, more than made expenses, the audit showing a profit of about $1,500.00. It would be fortunate if this amount could be increased, however, it probably cannot be, as we are now carrying all of the advertising that a Journal of this size can expect to acquire. Our amount of advertising is largely based upon two factors: the size of our Journal and the number of subscriptions, and we are informed that we are now carrying as much advertising, through the Cooperative Medical Advertising Bureau, as any other Journal of our size.

"If the same profit can be maintained in the future, the Editor has proposed that the basic contract be increased eight pages for each issue. Our basic contract at this time is for 56 pages and we would like to increase it to 64.

Respectfully submitted,
Sam A. McKeel, President."

On motion of Dr. Fulton, seconded by Dr. Cook, the report of the Council was adopted.

The Speaker then called for report of Committees, these reports, which were published in the Journal, were presented by the Secretary and in all instances were adopted.

Dr. Turner, Chairman of the Committee on Post Graduate Medical Teaching, submitted a supplement verbal report as follows: "We have 85 per cent attendance in the northeastern part of the state. Letters went out last Thursday to the southeastern part, and we had six registrations come in Monday morning. That is excellent, I believe. I would like to express the appreciation of the Committee personally to Dr. Pearce for his fine cooperation. He is saving us lots of money by mimeographing our letters. Dr. Patterson of the School of Medicine allowed us to use some of his equipment, which would have been very expensive. That is saving the State Association, for their Post Graduate Teaching, a great deal of money."

Dr. Byrum, Chairman of the Committee on Public Policy and Legislation, said "of the 1,349 who are members of the Association 625, or less than half, responded to the Committee's appeal for funds. Part of this was spent in printing the Petition which you have in your hands at this time; other money was spent in preparation of the case before the Secretary of State, and more expense was necessary to appeal this to the State Supreme Court. A motion is now pending in the Supreme Court to dismiss this bill. If the Supreme Court acts favorably on that motion then our troubles are ended. If this matter comes to a vote the campaign must be diligently prosecuted and it is my opinion that the doctors of the state must arouse themselves to greater activity than ever before."

On motion of Dr. McNeill, seconded by Dr. Walker, the report of this committee was unanimously adopted.

The election of Honorary Members was next taken up and on motion, duly seconded and carried, the following were elected: Doctors Caroline Bassman, Claremore; J. C. Bushyhead, Claremore; W. T. Ray, Gould; D. D. McHenry, Oklahoma City; G. W. West, Eufaula.

The Speaker then called for report of the Resolutions Committee, and Dr. Ewing, Chairman, requested further time, which was granted.

Dr. McNeill presented the following amendment to the By-Laws, which was accepted and will be voted upon at the next meeting of the House of Delegates.

Chapter VII — Committees

Section 1. The Standing Committees of this Association to be appointed by the President, shall be as follows:

1. A Committee on Scientific Work.
2. A Committee on Public Policy and Legislation.
3. A Committee on Medical Defense of the Council.
4. A Committee on Medical Education and Hospitals.
5. A Committee on Medical Economics.
6. A Committee on Public Health.

Each of these committees, except the Public Health Committee shall consist of three members, each of whom shall serve for a term of three years. One member of each of these Committees, except the Public Health Committee, shall be appointed annually by the President; one member shall be appointed for a term of three years; one for two years, and one each for a year. The Public Health Committee shall consist of one member from each Councilor District to be appointed as follows: Three members for three years; three members for two years; and four members for one year, and continuing in this manner, maintaining a Committee of ten (10) members. The President may appoint such other Committees as may be deemed necessary for special occasions.

Section 2, Section 3, Section 4, Section 5, and Section 6, as is.

Section 7, Change: "The Committee on Public Health shall study the problems of Public Health of the State of Oklahoma and advise with the Commissioner of Public Health as to an acceptable program."

Section 8, (Present Section 7).

* * *

Dr. Starry, Oklahoma City, presented an amendment to the Constitution:

Article VI — Council Members

The Council shall be the Board of Trustees of this Association. The Council shall have full authority and power of the House of Delegates between annual sessions, unless the House of Delegates shall be called into session, as provided in the Constitution and By-Laws. It shall consist of the (1) Councilors, (2) the President, (3) President-Elect, (4) Secretary-Treasurer-Editor, (5) Speaker of the House of Delegates, and (6) the Vice Speaker of the House of Delegates. The quorum shall consist of eight members.

This amendment was accepted by the House of Delegates and will be voted upon at the 1939 meeting.

Dr. Wendell Long, Oklahoma City, was recognized by the Chair, and presented the following

discussion as to the report of the Committee on Control of Cancer:

"I am Chairman of the Committee on Control of Cancer. We are getting through rather early and I hesitate to speak about it, but apparently many of the members of the State Medical Association missed some of the masterpieces in our State Journal. In that State Journal was a report of our Committee in March or in April, which outlined the Women's Field Army activities. I call attention to it so that the members may read that report as applying to Oklahoma. I call attention to that report, because in Oklahoma, we have taken the greatest care to establish the policy so that the doctors in each County will have full control of the activities within that County, not only full control of the medical activities, but full control of the Women's Field Army activities within that County. The second thing I would like to suggest is that this is the only scheme of which I know in which lay education is attempted by organized medicine, and controlled by organized medicine as such. You can judge it on its merits whether that is a desirable way to have contact with the lay public. The third point is the fact that the American Society for the Control of Cancer has been most liberal in giving out material and in giving funds for the establishment of this program in this state, and up until the first of April all of the County Societies had been informed and material sent to them, and the Women's organization over the state had been formed with total expenditure, including some 80,000 pieces of literature, 12 projection machines, 60 film scripts, and our office expense in Oklahoma City, of $960.00. All the women worked for nothing and the doctors did the same thing. Mr. Speaker, I thank you for the privilege of presenting these additional points."

House adjourned.

* * *

HOUSE OF DELEGATES
May 10, 1938, 8 A.M.

Meeting called to order by Speaker of the House.

Dr. C. P. Bondurant, Oklahoma City, appointed Sergeant-at-Arms and asked that none be admitted but Delegates and Members of the State Medical Association.

Report of the Credentials Committee by Dr. Howard.

Speaker asked for nominations for President-Elect.

Dr. Ewing presented the name of Dr. W. A. Howard, Chelsea. Nomination seconded by Dr. Ritzhaupt.

On motion of Dr. Adams, seconded by Dr. Fulton, which unanimously carried, nominations were closed and the Secretary was instructed to cast the entire ballot for Dr. Howard as President-Elect. The Secretary complied with the motion.

The newly elected President-Elect addressed the House of Delegates, saying "I appreciate this honor you have conferred upon me. I am just an ordinary country doctor and practitioner. I know the record that has been set by my predecessors and shall endeavor to merit this confidence you have placed in me. I have one object in view and that is to forward a constructive program for organized medicine in Oklahoma."

The speaker called for nominations for Secretary-Treasurer-Editor and the name of Dr. Willour was presented by Dr. McCarley seconded by Dr. Walker and Dr. Fulton.

On motion of Dr. Harris, Wilburton, seconded by Dr. Cook, the nominations were closed and Dr. Howard was instructed to cast the vote of the House of Delegates for Dr. Willour. Dr. Howard complied.

Nominations for Councilors were then called for and the following: Doctors Risser for District No. 3; McNeill for District No. 4; Hardy for District No. 5; and Stevenson for District No. 6, were named.

On motion of Dr. Willour, seconded by Dr. Logan, and unanimously carried, the above named doctors were elected Councilors from their respective Districts.

Dr. H. C. Weber, member of the Committee on Post Graduate Medical Teaching then presented Dr. Edward N. Smith, full time Instructor on Post Graduate Medical Teaching in Obstetrics, who expressed himself as being pleased to meet the members of the House of Delegats, and saying in part "We have been underway for about five weeks and the attendance seems to be between 95 and 98 per cent. I have answered about 50 requests for consultation, ranging from ectopic pregnancy to a little matter of malpractice. One doctor has to drive 70 miles to attend this course and all of these things are very gratifying. I feel there is a definite need for this work. This is really a great responsibility that you have placed on me and whether or not your County Societies and I meet that responsibility had better be talked about next year."

The Speaker then called for nominations for Delegates to the American Medical Association.

Dr. Searle, Tulsa, placed the name of Dr. Cook, Tulsa, which was seconded by Dr. McNeill, Oklahoma City.

The Secretary then explained that our quota had been reduced from three to two Delegates and explained that they would have to be elected in alternate years.

Dr. Ewing then asked the question "When do the Delegates' term begin and end?"

The Secretary stated "Drs. Cook and Reed were elected for the years 1939 and 1940. It has been the custom of the State Medical Association that Delegates begin their terms of office one year from time of election."

Dr. Ewing then asked where the authority for this could be found.

Dr. Willour replied: "There is no authority but it has been a matter of custom since the organization of this Association and the Constitution and By-Laws do not specify as to this particular point."

In view of the complicated situation Dr. Cook requested the privilege of the floor and tendered his resignation as Delegate. This was followed by Reed's resignation.

The Speaker said, before ruling upon the question, "I would like to read a letter from Dr. Wm. C. Woodward of the Legal Department of the American Medical Association." This he did and after some discussion presented the following ruling: "THAT Dr. McLain Rogers, Clinton, is the duly elected Delegate for 1938 and we will proceed with the election of one Delegate."

Dr. Phil McNeill made a motion that we appeal from the ruling of the Chair. This was duly seconded, but two-thirds being required, the motion was lost upon vote.

Dr. Searle then nominated Dr. Cook, Tulsa.

Dr. Lealon Lamb, Clinton, nominated Dr. Reed, Oklahoma City.

Dr. Ritzhaupt, Guthrie, nominated Dr. Fulton, Atoka.

The ballot was then spread and the tellers reported Dr. Fulton 29 votes, Dr. Cook 21, and Dr. Reed 20.

The Chair then ruled that it took a majority to elect, and Drs. Fulton and Cook having the largest number of votes, were voted upon and the ballot was reported showing Dr. Cook received 38 and Dr. Fulton 36.

On motion of Dr. Fulton, duly seconded, Dr. Cook was unanimously elected as Delegate.

Dr. I. W. Bollinger, Henryetta, placed the name of Dr. Edwards, Okmulgee, as alternate for Dr. Cook.

Dr. Turner, Oklahoma City, placed the name of

Dr. Reed as alternate for Dr. Rogers.

On motion, duly seconded, these alternates were unanimously elected.

The Speaker then called for nominations for a Meeting Place for 1939.

Dr. Dale Collins, Oklahoma City, invited the Association to that City for 1939.

On Motion duly seconded their invitation was unanimously accepted.

Dr. Willour read the amendment to the By-Laws, presented at the last meeting of the House of Delegates (May 9th, 1938). On motion of Dr. Bondurant, seconded by Dr. Ritzhaupt, this amendment was unanimously adopted.

Report of the Resolutions Committee was then called for and Dr. Ewing, Chairman, presented the following:

RESOLUTION

"WHEREAS, there has been introduced by Congressman Drew of Pennsylvania, a bill which would place osteopaths on the same plane with qualified doctors of medicine, under the United States Employees' Compensation Act, and

"WHEREAS, it is our opinion that osteopathy is not a safe method of diagnosis and treatment of disease or injury,

"THEREFORE BE IT RESOLVED that we advise our Senators and Members of Congress to oppose this measure."

The above resolution was duly seconded and adopted.

* * *

The following resolution was presented and Dr. Ewing moved its adoption:

"WHEREAS, the business activities of the Oklahoma State Medical Association are increasing in volume and in importance, and

"WHEREAS, the constitution of the Oklahoma State Medical Association provides for the employment of an Executive Secretary, and

"WHEREAS, we believe that the best interests of this State Association would be served through the employment of a full-time Executive Secretary,

"THEREFORE BE IT RESOLVED, that the House of Delegates recommends that the Council employ an Executive Secretary at the earliest practicable time."

This resolution was discussed by Drs. Ned Smith and James Stevenson of Tulsa. In their discussion they laid great stress upon the employment of this executive secretary, at the earliest possible moment, not later than Jan. 1st, 1939. Various methods of raising sufficient funds to comply with the above resolution were discussed, i.e., raising the dues, voluntary contributions, or assessments. **On motion of Dr. Ned R. Smith, seconded by Dr. J. S. Fulton, unanimously carrying, the annual dues will be $12.00 beginning January 1, 1939.**

* * *

Dr. Aisenstadt made a motion that the President of the Association be authorized to appoint a committee of three to have charge of the revision of the Constitution and By-Laws, and submit their report at the next meeting of the House of Delegates. Seconded.

An amendment was offered by Dr. Ritzhaupt, providing for a Committee of three, appointed by the Speaker, approved by the Council, and authorized to secure legal talent, if necessary, to assist in carrying out this work. This was accepted by Dr. Aisenstadt and unanimously adopted.

Dr. Reed suggested that the Judicial Council of the American Medical Association be called upon to assist in this matter. The amended motion was there voted upon and unanimously carried.

Dr. Ritzhaupt then presented the following legislative program: "I move that the House of Delegates approve the legislative program which follows and instruct the President, Councilors and Legislative Committee of the Oklahoma State Medical Association to prepare in detail and diligently try to fulfill it.

"1. Authorizing the State Board of Medical Examiners to annually register each physician in the state who has been examined or registered under the Medical Practice Act of the State of Oklahoma.

"2. To resist and defeat any legislation that would destroy or lower the standard as set out in the Medical Practice Act of the State of Oklahoma.

"3. To encourage such legislation which will make it mandatory for the County Commissioners of the several counties in the state to set aside sufficient funds to provide hospitalization, medical and surgical care for the 'medical needy.'

"4. To ethically and professionally endeavor to preserve such statutes as now exist for the protection of the public health and welfare of the citizenship of Oklahoma."

On motion by Dr. Ritzhaupt, seconded by Dr. Willour, and adopted, that it become the Legislative Program of the State Association.

On motion of Dr. Byrum, seconded by Dr. Ritzhaupt and unanimously carried, the Secretary was instructed to write the Secretary of each County Medical Society to the effect that it is the request of the House of Delegates that each County Society will be expected to make a contribution equal to $5.00 per member, this for the purpose of paying the expenses of the full-time Executive Secretary, until the payment of dues for 1939.

Dr. Garrison, Oklahoma City, presented the following communication from the Women's Auxiliary and said "The purpose is that this may be a help to you in the situation which we have discussed most of the morning. The purpose behind it is correct; therefore, I move you the sentiment expressed in this communication be approved by the House of Delegates:"

"To the House of Delegates,
Oklahoma State Medical Association,
Muskogee, Oklahoma.

"Gentlemen: The Women's Auxiliary to the Oklahoma State Medical Association, with a membership of 400, feels that it may be of great potential service to the State Association in matters of public education.

"With this in mind we wish to present for your consideration—

"First—That the Auxiliary be given an associate membership on the Public Policy and Legislation Committee, without vote but for the purpose of correctly informing the Auxiliary membership concerning legislative matters.

"Second—That we wish to offer our services to the County and State Associations for such organized lay-education as the Associations may direct.

Signed: The Executive Board
Mrs. Hugh Perry, President
Mrs. Geo. H. Garrison, President-Elect.
Mrs. Frank L. Flack, Secretary
Mrs. W. S. Larrabee, Treasurer."

The above was seconded by Dr. Bondurant and unanimously carried.

On motion of Dr. Bondurant, seconded by Dr. Lamb, and carried unanimously, our Delegates to the American Medical Association are to go uninstructed as to future meeting place.

Dr. J. A. Morrow, Sallisaw, addressed the House of Delegates, insisting that they use every effort to see to it that the newly elected Senate and House are favorable to our legislative program and that we not wait until the January election, but before we vote, ascertain definitely their attitude toward Organized Medicine and their problems.

House adjourned.

NECROLOGY COMMITTEE

The following report of the Necrology Committee was presented at the Memorial Service:

Each year at the time of our annual meeting it is indeed fitting that we pause and pay our respects to the members of our profession who have been called from the activities of life into the mysteries of the great hereafter.

Year by year we miss the faces of our friends with whom we have associated in the activities of this Association. Those of us who participated in the organization meeting at Oklahoma City in 1906 have seen many changes. There are but few now active who participated in this meeting. The ones who laid the foundation for this structure and so well planned for its development and progress have with a few exceptions passed on, and others have taken their places and will carry on the work. Those of us who belong to the Old Guard mourn today the loss of our old friends; we have lived to see many changes. Years of connection with this organization and its individual members have generated within us an affection and loyalty that makes loss or error strike to our very hearts.

The passing of an old associate or any misconduct of the Organization arouses within us a feeling of sadness or regret. We have our extra curricular hobbies, we have our golf or bridge buddies, we have our business and dinner club associates, but for our old and most intimate friends we come back to our profession and the men with whom we have worked as Doctors in the relief of suffering and the effort to raise the standard of the practice of medicine in Oklahoma.

May the members of this Association from generation to generation ever keep in mind the pioneer work which has been necessary to make possible this progressive organization. Never forget the old fashioned Doctor with his old fashioned and high ideals. Respect him, honor him, and sometimes mention him, that his reflection on this structure may not grow so dim as to be forgotten.

During the past year the Great Reaper has stretched forth His hand and taken from our membership about the usual number; their faces, their presence and their wise counsel we miss today. They have finished the course, they have kept the faith, and leave with us the memories of pleasant association and broken ties of friendship. Let us revere their memory, and so conduct ourselves both as individual Doctors and as an Association as to reflect no discredit upon their cherished memories.

The following list of deceased members have been reported to us during the past year:

Bagby, Oliver, Vinita, Craig.
Callahan, Hubert W., Tulsa, Tulsa.
Caton, Charles, Wynona, Osage.
Chambers, M. E. Vinson, Greer.
Clifton, G. M., Norman, Cleveland.
Cox, Charles P., Ninnekah, Grady.
Crawford, Gwen W., Bartlesville, Washington.
Fannin, Frank, Muskogee, Muskogee.
Friedeman, Paul, Stillwater, Payne.
Garabedian, G. A., Tulsa, Tulsa.
Hammer, John E., Kiowa, Kansas, Woods.
Harris, H. A. McAlester, Pittsburg.
Hinson, T. B., Enid, Garfield.
House, Chas. F., Walters, Cotton.
Howell, Chas. H., Meeker, Okfuskee.
Jacobs, J. C., Miami, Ottawa.
Joss, Wm. Irwin, Erick, Beckham.
Lain, L. C., Oklahoma City, Oklahoma.
Leonard, John D., Wagoner, Wagoner.
Mays, R. H., Altus, Jackson.
McCallum, C. L., Sapulpa, Creek.
Milroy, Joseph A., Okmulgee, Okmulgee.
Phillips, I., Miami, Ottawa.
Stooksbury, Jacob M., Shawnee, Pottawatomie.
Werner, John W., Newkirk, Kay.
West, A. A. Guthrie, Logan.
Wiley, G. A., Norman, Cleveland.

News Notes of Woman's Auxiliary

MRS. L. S. WILLOUR, McAlester, retiring president of the Women's Auxiliary of the Pittsburg County Medical Society, was elected State Vice-President at their meeting at the convention of the Oklahoma State Medical Association in Muskogee, in May.

The silver tray, awarded to the outstanding unit each year, was won by the Oklahoma County auxiliary.

The Management of the Septic Patient With Otitis Media

J. H. Maxwell, Ann Arbor, Mich. (Journal A. M. A., May 7, 1938), employs the expression "the septic patient with otitis media" rather than "the patient with otitic sepsis" in order to emphasize the frequently forgotten fact that the otitis media may be an incident in the course of an infection elsewhere in the body responsible for the patient's sepsis. In the present discussion those patients have been considered septic in whom, during the course of an otitis media, leukocytosis has developed with intermittent fever rising to 103 F. or higher at least once daily and who have continued to manifest such evidence of illness without abatement for five days or longer. A septic patient with otitis media may fall into one of three rather clearly defined groups: In the first group there is an infectious process, local or general, producing the clinical picture of sepsis antedating the otitis media. Unless a careful and detailed history is obtained the otologist may be led to performing a mastoidectomy or ablation of a sigmoid sinus when the source of the sepsis is extra-aural. The second group of cases is that in which there develops during the course of an acute suppurative otitis media an intercurrent infection which in itself is responsible for the appearance of sepsis. Because of this possibility, one never should be hasty in performing a mastoidectomy on a septic patient without careful attention to a complete physical examination. The third group of cases represents those of real otitis sepsis in which the infection of the middle ear and mastoid is responsible for the whole picture. These cases require truly individualized management, both medical and surgical. In such a patient one may be dealing with a toxemia or with a true septicopyemia, which may or may not be related to actual phlebitis or thrombosis of the sigmoid sinus.

Undulant Fever: Its Treatment With Sulfanilamide

Brucella melitensis, originally known as Micrococcus melitensis, is pleomorphic, its morphology in part determined by the culture medium or the preparation used for its study. Morphologically it is considered variously by several authors on bacteriology to be a coccus, a bacillus or a coccobacillus. On this basis, with the effect of the drug in question established against certain other pathogenic bacterial forms, Robert L. Stern and Ken W. Blake, Los Angeles (Journal A. M. A., May 7, 1938), working independently, gave sulfanilamide in therapeutic doses to each of three private patients suffering from clinically and serologically established undulant fever. Highly satisfactory and prompt results with clinical cure followed. The maximal dosage according to present standards appears to be necessary.

ABSTRACTS : REVIEWS : COMMENTS *and* CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Segmental Enteritis; Richard Lewisohn; Surgery, Gynecology and Obstetrics; February, 1938.

The subject of so called regional or as the author prefers to call it, segmental enteritis, is being widely discussed at present. A large number of papers on this subject have appeared in the last four years. Opinions differ not only as to the pathogenesis of these interesting lesions but also as to the best method of surgical treatment.

Undoubtedly a few years will elapse until we arrive at fairly definite views concerning the etiology of this disease and the best form of treatment for these lesions.

The author's conclusions are as follows: 1. Segmental or regional enteritis is not a rare disease. 2. Opinions differ widely not only as to the pathogenesis of these interesting lesions, but also as to the best method of surgical treatment. 3. This lesion is encountered most frequently in the terminal ileum. However, it may occur in any part of the gastro-intestinal tract. 4. It is doubtful whether segmental ileitis and ileocolitis are clinical entities. They may represent an attenuated form of acute ulcerative colitis and ileitis. 5. Perianal fistulas are frequently encountered. 6. Ileocolostomy with division of the ileum may effect a complete cure. 7. In the presence of fistulous communications with other parts of the intestinal tract primary resection becomes mandatory.

LeRoy D. Long.

Malignant Disease of the Small Intestine, Delayed Anastomosis Following Resection in Chronic Obstruction; P. K. Gilman; Western Journal of Surgery, Obstetrics and Gynecology; May, 1938.

Conditions found in the small bowel differ considerably from those in the large bowel. There is an almost complete absence of abrupt angulation associated with fluidity of alkaline contents in the former but no real basic difference to account for the rarity of malignant growths of the small gut compared with the rest of the canal.

This freedom of the small bowel applies not alone to growths primary in type, but, as is well illustrated in the duodenum, to invasion by extension. Carcinoma is rarely found at autopsy. Formerly death from intestinal obstruction undoubtedly included cases of cancer of the small bowel. Sarcoma is apparently found more frequently in the small than in the large bowel. Malignancy in the small bowel apparently manifests itself twice as frequently in men as in women.

The earlier in the disease the diagnosis of obstruction is made and exploration done the better prognosis. At best the prognosis is poor for malignant tumors whether operable or inoperable.

Intra-intestinal fluid levels and gas in the distended bowel shown in the X-ray plates denotes obstruction.

Tumors of the small bowel cause no characteristic symptoms. Symptoms present are usually those of intermittent partial obstruction.

Delayed anastomosis after resection where great disparity in size and physical condition between the resected ends exists would seem to be indicated. The procedure followed in one of the author's cases caused no more shock than would have followed enterostomy with a later resection and anastomosis and it resulted in lessened morbidity.

LeRoy D. Long.

Pilonidal Cysts; Surgery, Gynecology and Obstetrics; Stephen A. Zieman; February 1, 1938.

Pilonidal cysts are by no means rare. Numerous theories have been proposed in explanation of the etiology and pathology. Subjectively, pilonidal cysts are without symptoms unless infection sets in with the usual sequelae of inflammation.

There is considerable discussion regarding the treatment of pilonidal cysts. Summarily, the many methods may be condensed to: 1. Primary closure with suture after excision of tract. 2. Flap transplantation (Lahey method). 3. Excision with or without the use of the cautery knife and packing.

A recent article by L. K. Ferguson and P. M. Mecray in American Journal of Surgery, 1937, sponsors the primary suture method. An article by H. Rogers and M. G. Hall in the Archives of Surgery in 1935 leads one to believe that this sort of operation may be performed under the ordinary conditions of office practice. It is difficult to see how one can consider the treatment of pilonidal cyst a routine office procedure. No one can predict the extent, direction, or involvement of adjacent structures of these sinus tracts, and consequently, it appears to be as rash to perform an excision of a pilonidal sinus in the office as it is to resort to an equally dangerous practice of injecting with sclerosing material. Surgeons are unanimous in claiming that primary closure never should be done in recurrent cases, nor in the presence of apparent inflammation. Under these conditions, there is no election; excision and packing is the operation of choice. It is the author's belief that careful dissection can be done only under a general anesthetic with preparation commensurate with the uncertainty apparent in the handling of this type of case.

He thinks that excision with the cautery knife and cauterization of the epithelial sinus tract are likewise fraught with several dangers, not the least of which is the collection of serum that follows a burn. Primary closure, consequently, under these conditions appears contra-indicated.

He feels that the method of excision with open pack and permitting granulation from below is time tried, and in his hands, 100 per cent effective. The objection of long debilitation following such operation with protracted stay in the hospital and subsequent dressings is not substantiated in fact; nor is the criticism of a resulting large tender scar. The average days in the hospital for the writer's series of cases have been two, while the subsequent period of dressing has extended from six to 12 weeks, a favorable comparison with the other methods. The patient is not restricted from work for longer than one week. An interesting observation is that wide excision in this region is associated with little pain or discomfort. He feels that even if there were as much pain as one might expect, the extremely low recurrence should offset any of the above objections. Success is judged by the ultimate criterion of re-

currence; assuredly, then, the last method is by far the one of choice.

The procedure followed by the author in pilonidal cyst excision consists in the administration of a gas anesthetic while the patient is flat on his stomach. The usual sterile preparation of the operative field having been completed, injection of methylene-blue-hydrogen-peroxide into the sinus opening is done. He prefers hydrogen-peroxide to ethereal mixtures, or simple water, in as far as the ethereal mixtures are fat solvents and may lead to spurious tract excursions, while the plain water has very little penetration power. Wide excision of approximately two inches on each side of the midline is then done and ligation of the bleeding points accomplished by double No. 0 plain catgut. Occasionally currettement of the presacral fascia is required. With this sacrifice of tissue, one is not likely to overlook a remnant of epithelial structure. Wide excision also gives a large area for complete inspection. An iodoform pack is allowed to remain in the defect for a period of 24 hours. Thereafter, simple vaseline gauze and mercurochrome constitute the bi-weekly dressings. At each dressing, the small bands of adhesions across the midline are ruthlessly destroyed, and the wound permitted to granulate, filling in from below only.

LeRoy D. Long.

Non-invasive Potential "Carcinoma" of the Cervix. By Charles Summers Stevenson, Baltimore, Md., and Elemer Scipiades, Jr., Budapest, Hungary. Surgery, Gynecology and Obstetrics, May, 1938, Volume 66, Page 822.

This is a study based upon examination of all the cervical tissue in the files of the gynecological pathological laboratory of Johns Hopkins Hospital, covering 4,000 cases with 10,000 microscopic sections of cervical tissue.

The purpose of this review was the isolation of instances of what they prefer to call non-invasive potential "carcinoma" of cervix and what Schiller considers and treats as definite early carcinoma.

The characteristics of this condition are anoplasia of the epithelial cells, hyperchromatic nuclei, heterogenous confusion of the epithelial cells, and a sharp border between the normal epithelium and the "carcinoma," usually oblique but no projection or invasion of the epithelium into the sub-epithelial structures.

In their study these authors were able to find 18 cases of this nature and they have studied their case histories in an attempt to correlate these pathological findings with actual carcinoma of the cervix.

In one patient the "carcinoma" remained non-invasive for eight years and one month following which it developed into a clinical carcinoma and caused the death of the patient.

A second patient died of pernicious anemia three years after the first biopsy examination had revealed a non-invasive potential "carcinoma." At autopsy serial sections of this cervix revealed that invasion had taken place shortly before death.

"The original pathological diagnosis in nine cases was 'epidermoid carcinoma of cervix,' while in seven it was 'chronic cervicitis'; both polyps were called benign. As far as we were able to determine, from making serial sections of all available tissue on these cases, all of the growth was apaprently removed with the specimen in four of the five trachelorrhaphies, the two amputations, and the one panhysterectomy. In nine of the 11 other patients subjected merely to biopsy, sectioning of the remaining available tissue did not allow us to make up our minds definitely on this point, although in one instance it might well have all been removed." Therefore, in seven of their cases they felt that all of the lesion was apparently removed when the specimen was obtained and would therefore have no significance in the development of a subsequent clinical carcinoma.

Five of the remaining nine cases were recognized as "carcinoma" and were given adequate radium treatment so that they too are of little assistance in establishing the relationship of this condition to clinical carcinoma.

Of the four remaining patients two were given thorough cervical cauterization following biopsy and have had no subsequent clinical carcinoma.

Of the two remaining patients one has not been followed but the other was alive and well when last seen in July, 1936.

The authors therefore present this material feeling that they cannot say definitely that the invasive carcinoma developed as a true growth continuity in any of their patients but that it was highly suggestive and they feel that other studies should be attempted so as to combine it with such as this one in order to ascertain whether or not this non-invasive potential "carcinoma" of the cervix will eventually produce invasion of the stroma and clinical carcinoma.

Comment:

These authors have done a very laborious piece of work and have arrived at no definite conclusion. They are not willing to call this condition definite carcinoma and do not feel that they have justification for establishing a true continuity between this lesion and clinical carcinoma.

However, it must be evident to all that the earliest possible diagnosis of malignancies of the cervix is essential to a high rate of cure and it is equally evident that the lesion is probably present without symptoms for some time before it is even clinically evident upon the basis of present interpretations. It is therefore such work as this that will lead us into a proper appreciation of clinical findings and their correct correlation with pathological courses. It has the additional value of making doctors conscious of such early lesions, difficult to diagnose but relatively easier to cure.

Wendell Long.

The Treatment of Gonococcic Vaginitis with the Estrogenic Hormone. By Richard W. Te Linde, Baltimore, Md. Journal of the American Medical Association, May 14, 1938, Vol. 110, Page 1633.

This is a report of the cure of 175 cases with gonococcic vaginitis by amniotin.

There is a review of the previous work of Te Linde and Brawner published in October, 1935, and abstracted in this department at that time. In their previous work Te Linde and Brawner treated patients with gonococcic vaginitis by oral, hypodermic and vaginal administration of amniotin with results indicating that daily administration of vaginal suppositories containing 600 international units of amniotin was by far the preferable means of treatment.

In their previous series all showed the vaginal epithelial response in an average time of 13 days and the smears became permanently negative in 18 days, though treatment was continued over an average total time of 26 days.

The present routine of treatment adopted by Dr. Te Linde is well given in the original article and is here summarized. One suppository of amniotin containing 1,000 international units is introduced daily at bed time by the mother. The patients are brought back to the clinic at weekly intervals when vaginal smears and washings are made, the washings being made with a small medicine dropper. After the first negative smear the treatment is continued for two more weeks. In the average case the entire treatment extends over about one month. Earlier discontinuation of treatment is associated with recurrences. The children are brought back

to the clinic one and two months after discontinuing treatment for routine washings and smear.

The first 100 patients treated have been followed for a much longer time and of them 98 were well at the time of last examination, indicating a high degree of permanence of cures as there is a distinct possibility that the two who were not cured were probably subjected to re-infection.

They have been unable to find any clinical evidence of harm due to the treatment and the laboratory investigations quoted confirm this observation.

There is a rather long discussion of the importance of the increased acidity produced in the vagina as a factor in the cure of these patients.

Dr. Te Linde's summary is quoted below:

"We have reported the cure of 175 patients with gonococcic vaginitis by amniotin. All, except 16 of those to whom the product was given hypodermically in oil, were cured by the use of amniotin vaginal suppositories. We have yet to encounter a patient who failed to get well by this method of treatment, and we consider it a very satisfactory way of dealing with the disease. A follow-up of our first 100 patients, from three months to two and one-half years after the last treatment, showed 98 of them well. We saw no clinical evidence of harm due to the treatment, and laboratory investigations confirm this observation. We feel that the increased acidity brought about in the vagina by the action of the estrogen is a factor in overcoming the infection, but, since our results were not nearly so good when another acidifying suppository was employed, we believe that amniotin introduces an additional factor. We are inclined to think that this other factor is the covering of the vagina with thick epithelium, which prevents reinfection of the subepithelial tissues and thus permits the inflammatory process in them to subside. Our clinical observations and biopsies have indicated that the essential lesion of gonococcic infection of the lower part of the genital tract in female children is vaginitis."

Comment:

This is an excellent piece of work in stabilizing the treatment of a condition which was, until a few years ago, a most annoying and intractable type of disease. There is no question in my mind but that the proper treatment for gonococcic vaginitis in children is administration of estrogenic substances by vaginal suppositories. The results are satisfactory and convincing.

Wendell Long.

PLASTIC SURGERY

Edited by
GEO. H. KIMBALL, M.D., F.A.C.S.
404 Medical Arts Building, Oklahoma City

Breast Deformities; Anatomical and Physiological Considerations in Plastic Repair. Jacques W. Maliniac, M.D., New York City. American Journal of Surgery, January, 1938.

The author points out that successful repair of the breasts demands complete familiarity with the anatomy and physiology of the structures involved. Also that hypertrophic breasts may be malignant.

Physiology: Embryonic development: Traced from its embryonal origins, the breast first appears as an epidermal ridge extending from the axilla to the groin. Certain points of this ridge are thickened, forming the mammary glands. When the so-called "milk spots" (which are believed to derive from the sweat glands) develop unduly, accessory breasts appear at different points on the site of the epidermal ridge.

Infancy: At birth the breasts consist of epithelial columns without lumens, but they soon undergo change. The ducts assume definite cylindrical form and a milky fluid may be produced. These characteristic alterations occur in boys as well as girls. The process is completed during the first or second week of life and the epithelium returns to a quiescent state. Until puberty there is no further change. The gland measures about 2 cmm. in diameter and 1 cmm. in thickness.

Puberty: At puberty the female breast begins to develop, reaching adult form and proportions within a varying period of time. The normal breasts are made up principally of connective tissue, with comparatively little fat and glandular tissue. This gives it a characteristic resilience. At this period of life, the breast is usually a firm hemisphere which varies little with change of position, for the connective tissue bands which control its form have not yet sustained the repeated congestion produced by mammary function.

Pregnancy and lactation: Omitting the periodic changes of menstruation (when the tissue is oedematous, the fiber thicker and the epithelium becomes taller and stains more deeply) the next great alteration in the breast occurs during pregnancy. Its volume increases, especially after the third month, and the functional growth of the gland causes a diminution in fibrous tissue, with the result that the breast loses its hemispherical form. The skin covering is stretched and may show distension scars (striae) similar to those which appear on the abdominal wall. With lactation there is a further increase in volume and weight; the breast becomes still more distended and the tendency to pendulousness is heightened. As function ceases, a retrogression of glandular tissue occurs, but the pendulousness frequently remains because of the inability of the skin and supporting ligaments to regain their former elasticity. This is particularly true after repeated pregnancies, the extent of the process varying with the individual.

Senility: The final senile involution of the breast, in which the glandular structure disappears, begins at the menopause. As a rule, this involution involves the skin, fat and fibrous tissue as well as the gland. The result is a small, atropic mamma.

Anatomy:

The author points out that the fixation of the breast is two fold. Number (1) is the skin and number (2) is the retro-mammary fascia. I believe that the skin is the principal means of support. When the skin releases or elongates the pendulous breast develops.

In the plastic repair it is necessary to secure fixation of the transposed breast by using sutures placed against the pectoral fascia.

Blood Supply:

The blood supply must be preserved during reconstruction of the breasts. The breast derives its blood supply from three sources:

1. The thoracic lateral artery (branch of the axillary artery).
2. The internal mammary artery (branch of the subclavicular).
3. Perforant branches deriving from the third to the seventh intercostal arteries.

Surgical Procedure of Choice:

Whenever large amounts of fat and glandular tissue must be removed, the risk of interfering with the blood supply exists. To minimize this the author has employed for many years a two-stage procedure. The nipple is transposed with most of the blood supply intact and secondary resection is postponed until after the "take" of the ventral portion of the gland is complete.

This does not complicate or prolong the repair to any extent. Aside from the risk of necrosis, it is contraindicated to perform a complete reconstruction of two breasts in one stage. Speed is not the

primary consideration where form and symmetry and the avoidance of scars are essential elements in a good end-result. Since a one-stage operation must be highly protracted to accomplish all of these aims, it is more advisable to employ the two-stage procedure, which removes all risk to the blood supply and lessens the operative strain on the patient.

Summary:

Fixation of the breast is provided by the skin through multiple fibrous prolongations (Cooper's Ligament) into the gland and by the retro-mammary fascia which provides a suspensory ligament attached to the clavicula. A marked increase in the weight of the breast, from any cause, overtaxes this apparatus and produces ptosis.

In mammary reconstruction, the transposed gland should be firmly attached to the pectoral fascia to simulate normal fixation. This is done by means of a circular row of non-absorbable sutures, which must not be permitted to involve large amounts of gland or fat.

In reducing the gland, the central portion should be left intact to preserve the blood supply to the nipple and to retain such function as exists in the main central ducts. In glandular hypertrophy of the breast, a rare condition bordering on malignancy, the entire breast gland should be removed.

Circulation: Circulation in the breast is derived from the (1) thoracic lateral, which supplies the external half and skin; (2) the internal mammary, which is the principal source of supply of the internal half, including the central portion of the gland and the nipple; and (3) several perforant branches of the intercostal arteries which also supply the deep and central portions of the gland. There is little anastomosis between these, so the main blood supply must be carefully preserved in each part.

Since the thoracic lateral does not supply the nipple, the large amounts of glandular structure may be removed from the external quadrant without impairing the "take" of the transposed nipple. Great care must be taken in the excision of excessive fat and glandular structures in the area of the nipple and areola. Although the circular incision in the areola does not endanger the blood supply it should be superficial so as not to injure the underlying circular muscle fibers or interfere with the surrounding vascular plexus.

As the blood supply comes through the deep portion of the gland, there is always risk of interfering with the blood supply when large quantities of fat and glandular tissue must be removed. The author employs a two-stage procedure to minimize this risk. The nipple is transposed with most of the blood supply preserved and secondary resection is postponed until after the "take" of the central portion of the gland is complete.

Comment: I believe that Dr. Maliniac has the soundest plan so far advanced for reconstruction of pendulous breasts. The two-stage plan minimizes the impairment of circulation as well as infection. Recent experience of my own has proved to me that the plan is practical. It is well to remember that all breasts presented are not suited for plastic repair. When the indications are presented there are few operations that give such satisfactory results both to the surgeon and to the patient.

UROLOGY

Edited by D. W. Branham, M.D.
514 Medical Arts Building, Oklahoma City

Fundamentals In Water Balance. Walter G. Maddock; The Journal of Urology; April, 1938.

A normal adjustment between fluid intake and output to keep the water content of the body at a constant level of 70 per cent of body weight is necessary to good health. More than half the total daily supply of water is obtained from the food partaken. Each gram of food furnished 0.9 gm. of water, the resultant total amounting to 1,000 to 1,500 c.c. daily.

Water excretion concerns itself with two functions. 1. Excretion of waste material in solution by the kidneys. 2. The dissipation of body heat. The feces play no part normally so far as loss of water is concerned. Water for vaporization to dissipate heat may be thought of as having "preferential rights" on available fluid in the body.

In determining the amount of fluid required by the average patient having undergone a surgical operation one must compute the amount of water necessary for vaporization, the loss of fluid through hemorrhage, vomiting, etc., in conjunction with the amount of water necessary for excretion of 0.35 gm. of waste material by means of the urine. The average patient requires 1,000 to 1,500 c.c. of water daily for vaporization and providing the kidneys are in normal condition will necessitate 500 c.c. for excretion. However, if the kidneys are unable to concentrate the urine satisfactorily twice or three times this amount is needed. As there is always some abnormal loss of fluid content of the body incident to the operation this too must be added to the total. It will be observed that approximately 2,500 c.c. of fluid is absolutely necessary in the average non-septic patient undergoing an operation. If the patient is septic an extra 1,000 c.c. should be added to take care of the increased fluid loss incident to excessive vaporization, vomiting and excretion. Dehydrated patients obviously require an excess of water over this figure.

In regards to the parenteral administration of fluid it has been found that excess sodium chloride will result in retention of fluid in the tissue. As the normal salt intake is only 5 to 6 grams daily, large amounts of saline solution given parenterally will result in chloride retention. Where diuresis is desired the type of fluid given should be glucose solution in low concentration, while in the treatment of dehydration normal saline is preferable.

Comment: This is an excellent article which should be carefully read by every surgeon, especially those who do urological surgery. An adequate fluid intake is absolutely essential to the smooth convalescene of all patients undergoing surgery, the amount of water to be administered dependent on the several factors outlined above. It is my belief that a standard post-operative order for all surgical patients should be a measure of all the fluid intake and especially the output. No post-operative patient should have less than a liter output of urine for the first few days following surgery and if the specific gravity has been found to be low before surgery this minimum requirement must be increased. Strict attention to the maintainance of a proper water balance is an absolute essential in the care of surgical patients.

Is Sudden Emptying of the Chronically Distended Bladder Dangerous? C. D. Creevy; The Journal of Urology, April, 1938.

The author has reviewed the literature on this controversial question and he states that he has failed to find evidence to support the generally accepted view that it is a hazardous procedure. By critical analysis and a review of cases of deaths from prostatism who had been treated by both methods he has developed the following conclusions:

Conclusions: The idea that sudden emptying of the chronically distended bladder is dangerous is firmly fixed in the literature.

A classification of the theories explaining these dangers is presented.

The theories fail to withstand critical analysis, because:

At autopsy no lesions ascribable to sudden emptying of the chronically distended bladder can be distinguished from those due to infection in the absence of residual urine.

Eighty per cent of the patients who die after catheterization sucumb to pyelonephritis, either acute or chronic; 20 per cent succumb to infections outside the urinary tract.

Sudden death after catheterization may be due to coincidental coronary thrombosis or pulmonary embolism.

The phenomena usually ascribed to sudden emptying of the bladder can be produced by pyelonephritis.

Gradual decompression of the distended bladder did not reduce the mortality in a series of 120 cases when compared to a similar series in which sudden emptying was practised.

Gradual decompression should be abandoned. Doing so has not produced any untoward reactions in my experience.

Comment:

No teaching has been so firmly intrenched in the minds of the medical profession as this one. It has been handed down from generation to generation as to practically become an urological dogma. This seems strange when it is considered the paucity of proof which it rests on. Dr. Creevy has shown courage in facing the problem and joins a growing group who are of the opinion that no harm can result from the procedure.

Personally it is my belief that in practically all cases the quicker the bladder is emptied and kept empty the better for the patient. With him I agree the greatest danger lies in a super imposed infection incidental to the first catheterization. Because of this the initial catheterization should be accomplished with as little trauma as possible and the greatest care should be taken in preventing bacterial contamination. The prostatic case who is suffering from a long standing urinary retention preferably should be hospitalized before subjecting them to the first catheterization and subsequent treatment.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
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Intracapsular Cataract Extraction. O. M. Duthie, M.D. British Journal of Ophthalmology, January, 1937.

The author agrees that this is a highly controversial subject and cites Appleman with a series of 160 cases who regards it as an ideal procedure, however de Grasz thinks further results of the intracapsular removal must be followed up for many years, while Duke-Elder think that before a worthwhile opinion can be formed, the end results of the operation must be examined more carefully.

Sinclairs' method is used by the author with minor deviations, i.e. extraction of the lens by "tumbling"—grasping the anterior capsule below and delivering the lower pole first which dislocates the upper pole backward.

The series reported in this article is made up of 100 consecutive cases—43 mature and 57 immature cataracts.

The modifications of Sinclair procedure are: The author uses a retro-ocular injection 20 minutes before operation. This reduces tension and lessens the chance of losing vitreous. Elsching agrees with this but Knapp does not deem a preliminary softening necessary. The author inserts retraction sutures painlessly with local anaesthesia at the junction of the middle and inner, and the middle and the outer thirds of the margin of the upper lid. No speculum or lid elevator is used. He likes a large corneal section made completely with a Graefe Knife if possible, ending with a small conjunctival flap. If the globe is not softened preoperatively, there is danger of dislocating the lens if a very large section is made with the knife. In extracting, the anterior capsule must be grasped well down as near the level of the pupillary margin below as possible. Going slowly the lens is rocked gently until it is dislocated below and then with the forceps guiding the lens through the wound, the lens is delivered with the aid of pressure exerted on the globe below. It is quite important that the operator have a forceps that is suitable. Postoperatively the lids are kept closed by strapping the upper lid sutures on to the cheek for 24 hours. A peripheral iridectomy with a firm closure of the wound after operation is the ideal procedure.

In order to prevent prolapse and ultimate eccentric pupil, some of the cases were kept on pilocarpine for 48 hours after operation. These had a tendency to develop iritis. If the section is large, you have the attending danger of a prolapse.

In the complications there were 28 hyphaemas, seven iritis, eight iris prolapse, four loss of vitreous at operation, two loss of vitreous after operation and one each of corneal blood staining, detached choroid and detached retina.

If cases are excluded where vision was reduced as a result of the other eye being diseased (not related to the operation) then the author claims 6/6 or better in 77 per cent and 6/9 - 6/12 in 19 per cent visual acuity.

The Management and Treatment of Otogenic Meningitis. Samuel J. Kopetzky, M.D. The Annals of Otology, Rhinology and Laryngology, March, 1938.

This is the Presidential Address, delivered before the Western Section meeting of the American Laryngological, Rhinological and Otological Society, Santa Barbara, California, January 29, 1938. It is an unusually interesting paper that does not lend itself well to abstracting. The author's conclusions are as follows:

1. In conclusion, I would say that the surgical drainage of the meninges does not answer the problem presented by mastoiditis, because the lesion is usually a multiple one consisting of many foci of active infection spreading along the route of many pial vessels. The problem is more concerned with keeping the brain tissue alive. To accomplish this, results of the brain-tissue-cell activity must be removed from the region of the brain cells, and the desired means of doing this is in keeping the cerebrospinal fluid circulating. Any procedure which stops the circulation of the fluid defeats the objectives which are in view. Brain cells naturally function best and their deleterious products are removed best when they are surrounded by cerebrospinal fluid whose chemistry is maintained as nearly normal as possible. The repeated small blood transfusion has in my hands accomplished this purpose better than any other method, and in all the cases which I have here sketched, stoppage has not occurred, and I think this is due to the prompt institution of transfusion with the first advent of the case in my care, and the continuous use of this means, irrespective of other therapy.

2. Study of healed cases from literature showed that cured cases seemed to be obtained where the clinical picture is not so stormy and the symptom complex may be described as weak, and where

pressure signs predominate over signs of toxicity. Repeated taps with a study of the pressure each time helps to control this pressure by giving an intimation of how promptly the pressure falls and how long it remains low.

3. The removal of the surgical bone focus cannot be too strongly stressed. In exposing the dura surrounding the temporal bone the procedure to do this breaks the contiguity of the penetrating skeletal dural vessels and interrupts the progress along these vessels of an infection from the bone to the dura, and helps healing the meningeal lesion.

In the examination of the cerebrospinal fluid, the following factors all need evaluation in summing up a clinical picture; the physical characteristics of the fluid; the pressure under which it is obtained; its biochemistry; its cytology; and finally its bacteriology.

4. Chemotherapy, especially sulfanilamide, has given me better results than any I have obtained by any other drug, sera or vaccine. It is demonstrable in the blood and in the cerebrospinal fluid when given by mouth. Combined with small transfusions it is the best means to date which I have employed.

In giving sulfanilamide it is well to make periodic examinations to watch for the formation of metahemoglobin, a pathological by-product sometimes found in the administration of this drug. The formation of metahemoglobin must be avoided. Its marked presence constitutes a danger sign indicating stoppage of the drug. The simultaneous administration of the transfusions helps to hold this by-product within bounds and enables us to continue it longer than otherwise.

5. Rosenthal found sulfanilamide a potent therapeutic agent in experimental pneumococcal infection with virulent strains, in mice, rabbits and particularly in rats. The curative action was most evident with Type III pneumococcal infections. Rosenthal concluded that "up to the present time no other compounds have been found as effective against pneumococcic infections as sulfanilamide."

Gross and Cooper also obtained favorable results with the use of sulfanilamide in Type III pneumococcal infections in rats.

Long and Bliss reported that, our experience in the treatment of clinical pneumococcal infections in human beings has been primarily limited to those of the middle ear and mastoid. Our observations tend to show that sulfanilamide has about one-half the chemotherapeutic effect in pneumococcal infections that it has in hemolytic streptococcal infections of the middle ear and mastoid."

Mertins and Mertins recently reported a case of unclassified Type IV meningitis of otitic origin which recovered following sulfanilamide therapy.

The mode of action of sulfanilamide is still mooted. Rosenthal believes that "the bacteriostatic and bactericidal action of sulphonamide on pneumococci in vitro is adequate to explain its chemotherapeutic effect in animals. The nature of this action in vitro is unusual in that the drug is not an antiseptic in the usual sense." Long and Bliss, however, hold that a change takes place in the organism which renders them susceptible to phagocytosis, but the nature of this change is still unknown.

6. When a meningitis has run its course, and the fluid tends to become normal, and the symptoms present themselves suggestive of a brain abscess, it is well to perform ventriculography before accepting a diagnosis of brain abscess. If the fluid can be kept circulating, and the pressure kept down, otogenic hydrocephalus has a tendency to heal, as the three cases cited by me all tend to demonstrate.

7. Handled in this logical way, we are in a position to say, that otogenic streptococcic meningitis is on the way toward coming under therapeutic control, and the prognosis heretofore invariably grave, gives better promise now than formerly that more recoveries will be accomplished.

Differential Diagnosis of Bacterial Meningitis of Aural and of Nasal Origin. Joseph C. Yaskin, M.D., Philadelphia. Archives of Otolaryngology, April, 1938.

This is a comprehensive statistical report on the etiological factors of bacterial meningitis. This disease occurs frequently and ranks as one of the most important acute infections of the central nervous system. While it occurs most frequently as an independent infection it frequently complicates ear and nose infections. Hospital statistics from the more densely populated areas show meningococci and tuberculous meningitis most common. In the author's series of 123 cases of bacterial meningitis, a different picture is indicated. These 123 cases occurred between 1920 and 1937 and were from all causes. Ninety-six cases were from the Graduate Hospital of the University of Pennsylvania. "In 54 of these cases the condition was not a complication of any frank infection of the ear or nose; in 37 it was a complication of disease of the temporal bone; in 21 a complication of disease of the paranasal sinuses, and in 11 a sequala of cranial trauma." The organisms most frequently present in the infection resulting from nose or ear infections were streptococcus, pneumococcus and staphylococcus.

Some factors enumerated which irritate the meninges are: exogenous poisoning, systemic toxemia, virus and bacterial intoxication and infection, epidural infection in the brain and spinal cord and certain types of tumor of the brain. Common signs and symptoms are headache, dizziness, vomiting, rigidity of the neck and Kernig's and Brudenski's sign. Changes in the spinal fluid tell the type and cause of the meningeal irritation. The differential diagnoses includes conditions not due to invasion by known bacteria such as cervical adenitis, retropharyngeal abscess, meningismus, virus diseases, hemorrhagic conditions, acute syphilitic meningitis and aseptic meningitis and also other forms of bacterial meningitis, most commonly meningococcic and tuberculous.

Each case presents a problem in itself. All the signs and symptoms are rarely present in one case; many have a paucity of signs and symptoms; many are atypical. The clinician must be ever alert in giving due consideration to the entire picture presented in one of these cases if the best results are to be obtained.

The author states he has never had a recovery in a case of tuberculous meningitis.

The Clinical Picture of Diseases of the Labyrinth Wall. Dr. Edmund Prince Fowler, New York. The Laryngoscope, March, 1937.

Correlation of clinical, laboratory and autopsy findings presupposes progress in the understanding of any disease.

Anatomically the author describes the labyrinthine walls as "a bony capsule surrounding the static and auditory membranous labyrinths." There are present entrances and exits for lymph, blood vessels and nerves; the two cochlea windows for pressure and vibrations; the labyrinth walls have in them many spaces which contain tissue juices, arterioles, veins and neural structures which by their action have to do with the bony structure both in health and disease.

The bone of the labyrinthine capsule differs in structure from ordinary bony formation. Haversian systems are not present except in the very aged. Basophilic islands which are ordinarily found only in the embryo are normally present in the adult labyrinthine capsule. Route of invasion may be by

any or all of the following: the middle ear, mastoid, labyrinth and cranial cavities, sheaths of the nerves, the lymph channels, and lumen or sheaths of the vessels.

Suppurative disease of the capsule may cause death. The signs and symptoms are variable. All medical and surgical procedures intrinsically are preventive. Heredity is a factor to be considered in disease of the capsule. Total loss of function may ensue following an infection. This depends upon "the extent, virulence and position of the lesions and upon adjacent or distant coincidental or contributing factors."

Some symptoms simulating labyrinthine wall disease which may lead one to making a wrong diagnosis are: Deep-seated pain, diminished hearing or complete deafness, tinnitus, vertigo or other disturbances of equilibrium, nausea, vomiting, positive fistula test, spontaneous or abnormally induced mystagmus and past pointing, and facial paralysis. Differential diagnosis includes evidence of rickets, osteitis dystrophia fibrosa, asteomalacia, von Recklinghausen's and Paget's disease, unhealed fractures and new bone formations. Osteomyelitis does not occur here as there is no marrow in the capsule.

The author is of the opinion that otosclerosis is not wholly due to a general disease since the pathology in the bony capsule of the labyrinth is not found any other place in the body.

Stereoscopic Roentgenograms if read carefully and accurately are a great help in arriving at a correct diagnosis. Every available means and method must be employed if a minimum of incorrect diagnoses are made. Most to be relied upon is "the correlation of the history and repeated neurological, hearing and labyrinthine tests, with X-ray and laboratory findings."

If there is a suppurative disease present, drainage must be established. This is a radical procedure and the preservation of function is of secondary importance.

The Effectiveness of Therapeutic Measures after Poisoning with Sublethal and Lethal Dosages of Barbital in the Rabbit. O. W. Barlow, (Dept. of Pharmacology, Western Reserve Univ. School of Medicine). J. of Lab. & Clin. Med., 23:601 (March, 1938).

It is well known that resuscitation measures are symptomatically more effective against the short acting hypnotics of the pentobarbital, amytal, or avertin type than against barbital itself. The generally unfavorable prognosis clinically in barbital poisoning suggested the need for this study, which was partially supported by the Council on Pharmacy and Chemistry of the American Medical Association.

"Symptomatic control of the effects of barbital sodium poisoning in rabbits appears to be best accomplished by means of frequent medication with two central convulsants—picrotoxin and Metrazol, the judicious administration of a vasopressor agent, ephedrine, and the administration of fluids intravenously preferably in the form of five per cent glucose. . . . Medication should be continued at short intervals at the outset of the poisoning as judged by the symptoms present, and at longer intervals as the depth of hypnosis diminishes.

"The administration of picrotoxin results in a submaximal stimulation of respiration, and reactions become maximal only after a latent period. The product in these respects is inferior to Metrazol for emergency purposes. However, the duration of action of picrotoxin, which ranges from 30 to 180 minutes, depending on the depth of hypnosis, is superior to that of Metrazol. On the other hand, picrotoxin is not wholly free of undesirable side actions, in that significant secondary depressant effects may develop after excessive dosages.

"The respiratory stimulant effects of Metrazol were definitely superior to those of other agents tested. . . . This product is best suited for emergency purposes under conditions of respiratory failure. On numerous occasions spontaneous respiratory movements have been initiated with Metrazol intravenously in the presence of continued heart action, one or two minutes after cessation of respiration.

"Ephedrine . . . has a definite place in the antidotal sequence against hypnotic or narcotic poisoning. . . . Larger dosages of ephedrine are prone to produce a heart block of greater or less degree and an embarrassment of respiration due to the development of pulmonary edema.

"The administration of fluids by vein relieves the anuric effects of barbital, accelerates the urinary excretion of barbital slightly, maintains a more normal water balance, and very probably reduces the tendency for the development of acidosis. . . . Optimal results are obtained when fluids are administered in conjunction with picrotoxin, Metrazol, and ephedrine.

"Coramine, strychnine, and caffeine were of questionable value in the treatment of even lighter grades of barbital sodium poisoning. The order of observed efficiency corresponds to that in which the compounds are listed, as a matter of fact, the data obtained indicate undesirable effects, such as secondary depression from effective dosages, and, in the case of caffeine, these toxic effects were additive with those of the hypnotic."

The Chemistry of Vitamin A and Substances Having a Vitamin A Effect

L. S. Palmer, St. Paul (Journal A. M. A., May 21, 1938), gives a brief discussion of the chemistry of vitamin A and the substances having similar effects. In a previous vitamin symposium in The Journal, the perplexing question as to why the yellow-red plant pigment carotene exhibits vitamin A activity although the familiar vitamin A of liver oils is essentially a colorless substance had been answered by the discovery that carotene is convertible in the body to vitamin A. The chemical basis for such a relationship has been established by Karrer and his associates, who had determined the chemical constitution both of plant carotene and also of vitamin A from fish liver oil. The first complete structural formula for carotene has since turned out to be that of B-carotene which is by far the most important and widely distributed of the known coloring matters which have vitamin A activity. The final step in this chemical story is the synthesis of the pure vitamin in vitro. Recent reports indicate that this has been accomplished. The isolation of the crystalline natural vitamin has also been reported.

Drainage of Cerebrospinal Fluid in Treatment of Hydrocephalus, Syringomyelia and Syringobulbia

The shrinkage of the brain on the ipsilateral side suggested to N. D. Royle, Sydney, Australia (Journal A. M. A., April 16, 1938), that the operation of superior thoracic ganglionectomy might be used in the treatment of hydrocephalus. He has thus treated two patients in this manner. The operation of superior thoracic ganglionectomy causes an increase in the rate of capillary flow in the cervical region of the spinal cord and of the brain. The operation of lumbar sympathectomy increases the rate of drainage on the ipsilateral side of the cord in the lumbar region. Both operations provide an outlet for the cerebrospinal fluid where they tap the spinal circulation. In contrast to the other methods of draining the cord, this method has the virtue of permanence. Epinephrine has little effect after sympathetic denervation.

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GILL, W. W. ..... Enid
GREGG, O. R. ..... Enid
FEILD, JULIAN ..... Enid
FRANCISCO, GLENN ..... Enid
FRANCISCO, J. W. ..... Enid
HARRIS, D. S. ..... Drummond
HAMBLE, V. R. ..... Enid
HOPKINS, P. W. ..... Enid
HUDSON, F. A. ..... Enid
HUDSON, H. H. ..... Enid
HYER, J. V. ..... Garber
JACOBS, R. G. ..... 610 N. W. 9th St., Oklahoma City
KENDALL, W. L. ..... Enid
MAYBERRY, S. N. ..... Enid
McEVOY, S. H. ..... Enid
MERCER, J. WENDALL ..... Enid
METSCHER, ALFRED JOHN ..... Enid
MILES, G. O. ..... Enid
NEILSON, W. P. ..... Enid
NEWELL, W. B. ..... Enid
PIPER, A. S. ..... Enid
REMPEL, PAUL H. ..... Enid
RHODES, W. H. ..... Enid
ROBERTS, C. J ..... Enid
ROBERTS, D. D. ..... Enid
ROSS, GEORGE ..... Enid
ROSS, HOPE ..... Enid
RUDE, EVELYN ..... Enid
SHANNON, H. R. ..... Enid
SHEETS, MARION E. ..... Enid
TALLEY, EVANS E. ..... Enid
VANDEVER, H. F. ..... Enid
WALKER, JOHN R. ..... Enid
WATSON, J. M. ..... Enid
WILKINS, A. E. ..... Covington
WOLF, E. J. ..... Waukomis

GARVIN

ALEXANDER, ROBT. M. ..... Paoli
CALLAWAY, JOHN R. ..... Pauls Valley
GREENING, W. P. ..... Pauls Valley
GROSS, J. T. ..... Lindsay
JOHNSON, G. L. ..... Pauls Valley
LINDSEY, RAY H. ..... Pauls Valley
MONROE, HUGH H. ..... Lindsay
PRATT, CHAS. M. ..... Lindsay
ROBBERSON, JR., MARVIN E. ..... Wynnewood
ROBBERSON, M. E. ..... Wynnewood
SHI, A. H. ..... Stratford
SHIRLEY, EDWARD ..... Pauls Valley
SULLIVAN, C. L. ..... Elmore City

GRADY

BARRY, W. R. ..... Alex
BAZE, ROY E. ..... Chickasha
BAZE, W. J. ..... Chickasha
BONNELL, W. L. ..... Chickasha
BOON, U. C. ..... Chickasha
BYNUM, TURNER ..... Chickasha
COOK, W. H. ..... Chickasha
DOWNEY D. S. ..... Chickasha
EMANUEL, L. E. ..... Chickasha
EMANUEL, ROY ..... Chickasha
GERARD, G. R. ..... Chickasha
LEEDS, A. B. ..... Chickasha
LITTLE, AARON ..... Minco
LIVERMORE, W. H. ..... Chickasha
MARRS, S. O. ..... Chickasha
MASON, REBECCA H. ..... Chickasha
McCLURE, H. M. ..... Chickasha
McMILLAN, J. M. ..... Chickasha
MITCHELL, C. P. ..... Chickasha
PYLE, OSCAR S. ..... Chickasha
RENEGAR, J. F. ..... Tuttle
WOODS, L. E. ..... Chickasha

GRANT

HARDY, I. V. ..... Medford
HARRIS, FRANK M. ..... Medford
LAWSON, E. E. ..... Medford
LIVELY, S. A. ..... Wakita

GREER

BORDER, G. P. ..... Mangum
HOLLIS, J. B. ..... Mangum
LANSDEN, J. B. ..... Granite
LOWE, J. T. ..... Mangum
MEREDITH, J. S. ..... Duke
NELSON, H. J. ..... Granite
OLIVER, W. D. ..... Mangum
PEARSON, LEB. E. ..... Mangum
POER, E. M. ..... Mangum
RUDE, JOE C. ..... Collis P. Huntington Memorial Hosp., Boston, Mass.

HASKELL

CARSON, WM. S. ..... Keota
HILL, A. T. ..... Stigler
THOMPSON, W. A. ..... Stigler
TURNER, T. B. ..... Stigler
WILLIAMS, N. K. ..... McCurtain

HUGHES

BENTLEY, J. A. ..... Allen
BUTTS, A. M. ..... Holdenville
DAVENPORT, A. L. ..... Holdenville
DIGGS, G. W. ..... Wetumka
MAYFIELD, IMOGENE BUTTS ..... Holdenville
McCARY, D. Y. ..... Weleetka
FORD, R. B. ..... Holdenville
FREY, HARRY ..... Holdenville
HAMILTON, S. H. ..... Non
HICKS, C. A. ..... Wetumka
HOWELL, H. A. ..... Holdenville
MORRIS, R. D. ..... Allen
MUNAL, JOHN ..... Holdenville
PRYOR, V. W. ..... Holdenville
TAYLOR, W. L. ..... Holdenville

JACKSON

ABERNETHY, EDW. A. ..... Altus
ALLGOOD, JOHN M. ..... Altus
BERRY, THOS. W. ..... CCC Camp, Winnsboro, Texas
BIRD, JESSE ..... 1545 N. W. 44th, Oklahoma City
BROWN, R. F. ..... Altus

CROW, E. S. ..... Olustee
ENSEY, J. E. ..... Altus
FOX, RAYMOND H. ..... Altus
HIX, JOSEPH B. ..... Altus
MABRY, EARL W. ..... Altus
McCONNELL, L. H. ..... Altus
RAY, W. T. ..... Gould
REID, JOHN R. ..... Altus
STARKEY, WAYNE ..... Altus
TAYLOR, ROBT. Z. ..... Blair

JEFFERSON

ANDRESKOSKI, W. T. ..... Ryan
BROWNING, W. M. ..... Waurika
COLLINS, D. B. ..... Waurika
DERR, J. I. ..... Waurika
EDWARDS, F. M. ..... Ringling
HOLLINGSWORTH, J. I. ..... Waurika
MAUPIN, C. M. ..... Waurika
McCALIB, D. C. ..... Ringling
MINGUS, F. M. ..... Loco
WADE, L. L. ..... Ryan

JOHNSTON

LOONEY, J. T. ..... Tishomingo

KAY

ARMSTRONG, W. O. ..... Ponca City
ARRENDELL, C. W. ..... Ponca City
BARKER, W. JACKSON ..... Ponca City
BEATTY, J. H. ..... Tonkawa
BERRY, G. L. ..... Blackwell
BROWNE, H. S. ..... Ponca City
CLIFT, M. C. ..... Blackwell
CURRY, JOHN R. ..... Blackwell
GARDNER, C. C. ..... Ponca City
GHORMLEY, J. G. ..... Blackwell
GIBSON, R. B. ..... Ponca City
GORDON, D. M. ..... Ponca City
GOWEY, H. O. ..... Newkirk
HOWE, J. H. ..... Ponca City
HUDSON, J. O. ..... Braman
KREGER, G. S. ..... Tonkawa
MATTHEWS, DEWEY ..... Tonkawa
McELROY, THOMAS ..... Ponca City
MILLER, D. W. ..... Blackwell
MOORE, G. C. ..... Ponca City
MORGAN, L. S. ..... Ponca City
NEAL, L. G. ..... Ponca City
NIEMANN, G. H. ..... Ponca City
NORTHCUTT, C. E. ..... Ponca City
NUCKOLS, A. S. ..... Ponca City
OBERMILLER, R. G. ..... Ponca City
PETERS, M. L. ..... Blackwell
RISSER, A. S. ..... Blackwell
SANGER, W. W. ..... Ponca City
VANCE, L. C. ..... Ponca City
WAGGONER, E. E. ..... Tonkawa
WAGNER, J. C. ..... Ponca City
WALKER, I. D. ..... Tonkawa
WHITE, M. S. ..... Blackwell
WRIGHT, L. I. ..... Blackwell
YANDELL, HAYS R. ..... Ponca City

KINGFISHER

LATTIMORE, F. C. ..... Kingfisher
TAYLOR, J. R. ..... Kingfisher

KIOWA

ADAMS, J. L. ..... Hobart
ADAMS, RICHARD ..... Hobart
ANDERSON, H. R. ..... Mountain View
BONHAM, J. M. ..... Hobart
BRAUN, J. P. ..... Hobart
FINCH, J. WM. ..... Sentinel
HATHAWAY, A. H. ..... Mountain View
MOORE, J. H. ..... Hobart
PIERSON, DWIGHT D. ..... Hobart
WALKER, F. E. ..... Lone Wolf
WATKINS, B. H. ..... Hobart

LATIMER

HARRIS, J. M. ..... Wilburton

LE FLORE

BAKER, F. P. ..... Talihina
BOOTH, G. R. ..... LeFlore
COLLINS, E. L. ..... Panama
DEAN, S. C. ..... Howe
FAIR, E. N. ..... Heavener
HARTSHORNE, G. E. ..... Spiro
HENRY, M. L. ..... Heavener
JONES, L. D. ..... Talihina
MINOR, R. W. ..... Williams
ROGERS, G. A. ..... Talihina
SHIPPEY, W. L. ..... Poteau
SKEMP, FRANK S. ..... 846 Garfield, Denver, Colo.
WOODSON, E. M. ..... Poteau
WOODSON, O. M. ..... Poteau
WRIGHT, R. L. ..... Poteau

LINCOLN

ADAMS, J. W. ..... Chandler
BAILEY, C. H. ..... Stroud
BAUGH, HAROLD ..... Meeker
BROWN, F. C. ..... Sparks
BURLESON, NED ..... Prague
DAVIS, W. B. ..... Stroud
HURLBUT, E. F. ..... Meeker
JENKINS, H. B. ..... Tryon
MARSHALL, A. M. ..... Chandler
NICKELL, U. E. ..... Davenport
NORWOOD, F. H. ..... Prague
ROBERTSON, C. W. ..... Chandler
ROLLINS, J. S. ..... Prague

LOGAN

BARKER, C. B. ..... Guthrie
BARKER, E. O. ..... Guthrie
BARKER, PAULINE ..... Guthrie
BUSSEY, H. N. ..... Mulhall
CORNWELL, N. L. ..... Coyle
DRESBACH, H. V. ..... Mulhall
FIRST, F. R. ..... Crescent
GARDNER, P. B. ..... Marshall
GOODRICH, E. E. ..... Crescent
GRAY, DAN ..... Guthrie
HAHN, L. A. ..... Guthrie
HILL, C. B. ..... Guthrie
LARKIN, W. H. ..... Minco
LE HEW, Jr., J. L. ..... Guthrie
MILLER, WM. C. ..... Guthrie
PETTY, C. S. ..... Guthrie
PETTY, JAMES ..... Guthrie
REDDING, A. C. ..... Coyle
RINGROSE, R. P. ..... Guthrie
RITZHAUPT, L. H. ..... Guthrie
SOUTER, J. E. ..... Guthrie
TRIGG, F. E. ..... Guthrie
WOLF, EUGENE ..... Marshall

MAJOR

SPECHT, ELSIE ..... Fairview

MARSHALL

HOLLAND, J. L. ..... Madill
LOGAN, J. H. ..... Lebanon
YORK, J. F. ..... Madill

MAYES

ADAMS, SYLBA ..... Hayward, Wis.
BRYANT, W. C. ..... Choteau
COPPEDGE, O. N. ..... Disney
HERRINGTON, V. D. ..... Pryor
HOLLINGSWORTH, J. E. ..... Strang
MORROW, B. L. ..... Salina
PUCKETT, CARL ..... 22 W. Sixth, Oklahoma City
RUTHERFORD, S. C. ..... Locust Grove
WERLING, E. H. ..... Pryor
WHITAKER, W. J. ..... Pryor
WHITE, L. C. ..... Adair

McCLAIN

COCHRANE, J. E. ..... Byars
DAWSON, O. O. ..... Wayne
KOLB, I. N. ..... Blanchard
McCURDY, W. C. ..... Purcell
ROYSTER, R. L. ..... Purcell

McCURTAIN

BARKER, N. L. ..... Broken Bow
CLARKSON, A. W. ..... Valliant
MORELAND, J. T. ..... Idabel
MORELAND, W. A. ..... Idabel
OLIVER, R. B. ..... Idabel
SHERRILL, R. H. ..... Broken Bow
SIZEMORE, PAUL ..... Broken Bow
WILLIAMS, R. D. ..... Idabel

McINTOSH

JACOBS, L. I. ..... Hanna
LITTLE, D. E. ..... Eufaula
STONER, RAYMOND WARD ..... Checotah
TOLLESON, W. A. ..... Eufaula
WOOD, JAS. L. ..... Eufaula

MURRAY

ANADOWN, P. V. ..... Sulphur
BURKE, RICHARD M. ..... Sulphur
FOWLER, Jr., A. ..... Sulphur
LUSTER, J. C. ..... Davis
ROSE, ERNEST ..... Sulphur
SADLER, F. E. ..... Sulphur
SLOVER, GEO. ..... Sulphur

MUSKOGEE

BALLANTINE, H. T. ..... Surety Bldg.
BERRY, W. D. ..... Barnes Bldg.
BLAKEMORE, J. L. ..... Barnes Bldg.
BRUTON, L. D. ..... Commercial Natl. Bldg.
COACHMAN, E. H. ..... Manhattan Bldg.
DIVINE, DUKE G. ..... Wagoner
DORWART, F. G. ..... Barnes Bldg.
EARNEST, A. N. ..... Barnes Bldg.
EWING, F. W. ..... Surety Bldg.
FITE, E. H. ..... Barnes Bldg.
FITE, W. P. ..... Barnes Bldg.
FRYER, S. J. ..... Surety Bldg.
FULLENWIDER, C. M. ..... Barnes Bldg.
HAMM, S. G. ..... Haskell
HOLCOMB, R. N. ..... Surety Bldg.
JOBLIN, W. R. ..... Porter
KAISER, GEO. L. ..... 562 No. Sixth
KLASS, O. C. ..... Surety Bldg.
KUPKA, J. F. ..... Haskell
McALISTER, L. S. ..... Barnes Bldg.
MOBLEY, A. L., Vets. Facility, Albuquerque, N. M.
NEWHAUSER, MAYER ..... Vet. Administration
NEELY, S. D. ..... Commercial Natl. Bldg.
NICHOLS, J. T. ..... Equity Bldg.
NOBLE, JOS. G. ..... 1400 E. Okmulgee
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OLDHAM, Sr., I. B. ..... 426 North Sixth
RAFTER, J. G. ..... Manhattan Bldg.
SCOTT, H. A. ..... Commercial Natl. Bldg.
SWEET, L. K. .....
THOMPSON, M. K. ..... Surety Bldg.
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WEAVER, W. N. ..... Barnes Bldg.
WHITE, CHAS. ED ..... 2430 Boston
WHITE, J. H. ..... Surety Bldg.
WOLFE, I. C. ..... 426 North Sixth
WOODBURN, JOEL T. ..... Surety Bldg.

NOBLE

CAVITT, R. A. ..... Morrison
COOKE, C. H. ..... Perry
EVANS, A. M. ..... Perry
FRANCIS, J. W. ..... Perry
RENFROW, T. F. ..... Billings
WIGNER, R. H. ..... Marland

NOWATA

KURTZ, R. L. ..... Nowata
LANG, S. A. ..... Nowata
PRENTISS, H. M. ..... Nowata
ROBERTS, S. P. ..... Nowata
SCOTT, M. B. ..... Delaware

OKFUSKEE

BLOSS, C. M. ..... Okemah
BOMBARGER, C. C. ..... Paden
BRICE, M. O. ..... Okemah
COCHRAN, C. M. ..... Okemah
JENKENS, W. P. ..... Okemah
KEYES, ROBERT ..... Okemah
LUCAS, A. C. ..... Castle
MELTON, A. S. ..... Okemah
PEMBERTON, J. M. ..... Okemah
PRESTON, J. R. ..... Weleetka
SPICKARD, L. J. ..... Okemah

OKLAHOMA

ADAMS, ROBT. H. ..... 501 Ramsey Tower
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ALFORD, J. M. ..... Medical Arts Bldg.
ALLEN, E. P. ..... 1200 North Walker
ALLEN, GEO. T. ..... 100 North Walker
ANDREWS, LELIA E. ..... 1200 North Walker
ARRINGTON, C. T. ..... 805 North Walnut
BAILEY, WILLIAM H. ..... 301 West Twelfth St.
BAIRD, Sr., W. D. ..... 2519½ South Robinson
BAIRD, Jr., W. D. ..... 2519½ S. Robinson
BALYEAT, RAY M. ..... 1200 North Walker
BARB, THOS. J. ..... 240 West Commerce
BARKER, CHAS. E. ..... 505-13 Osler Bldg.
BATCHELOR, J. J. ..... Medical Arts Bldg.
BATES, C. E. ..... Vet. Admin., Wichita, Kans.
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BEYER, M. R. ..... State Health Department
BERRY, CHAS. N. ..... 119 No. Broadway
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BINKLEY, J. SAM ..... Memorial Hospital, New York City
BLACHLEY, C. D. ..... 2752 N.W. 18th
BLACHLEY, LUCILLE ..... 2752 N.W. 18th
BOATRIGHT, LLOYD C. ..... Perrine Bldg.
BOGGS, NATHAN ..... Perrine Bldg.

BOLEND, REX ..... Medical Arts Bldg.
BONDURANT, C. P. ..... Medical Arts Bldg.
BONHAM, WM. L. ..... Medical Arts Bldg.
BORECKY, GEORGE L. ..... Ramsey Tower
BOWEN, RALPH ..... 1200 North Walker
BRADLEY, H. C. ..... Perrine Bldg.
BRANHAM, D. W. ..... Medical Arts Bldg.
BREWER, A. M. ..... Perrine Bldg.
BROWN, G. W. ..... Medical Arts Bldg.
BRUNDAGE, C. L. ..... 1200 North Walker
BURTON, JOHN P. ..... Osler Bldg.
BUTLER, H. W. ..... 1200 North Walker
CAILEY, LEO F. ..... Medical Arts Bldg.
CAMPBELL, COYNE H. ..... Medical Arts Bldg.
CANADA, J. C. ..... 216½ West Commerce
CATES, ALBERT ..... Medical Arts Bldg.
CAVINESS, J J. ..... Medical Arts Bldg.
CHARNEY, L. H. ..... Medical Arts Bldg.
CLARK, ANSON L. ..... Medical Arts Bldg.
CLOUDMAN, H. H. ..... Medical Arts Bldg.
CLYMER, CYRIL E. ..... Medical Arts Bldg.
COLEY, A. J. ..... Hightower Bldg.
COLOPY, PAUL J. ..... State Health Department
COLLINS, H. D. ..... Medical Arts Bldg.
COOPER, F. M. ..... Medical Arts Bldg.
COSTON, TULLOS O. ..... First National Bank Bldg.
COTTRELL, W. P. ..... 1706 S.E. 29th
DAILY, H. J. ..... Medical Arts Bldg.
DANIELS, HARRY A. ..... Medical Arts Bldg.
DAVIS, E. P ..... 1601 N.W. 25th
DEMAND, F. A. ..... 1200 North Walker
DERSCH, WALTER H. ..... Medical Arts Bldg.
DEUPREE HARRY L. ..... St. Anthonys Hosp.
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DOUGHERTY, VIRGIL T., Gorei, Abyssinia, Africa
DOWDY, THOS. W. ..... Medical Arts Bldg.
EASTLAND, WM. E. ..... Medical Arts Bldg.
ELEY, N. P. ..... 400 West Tenth St.
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EPLEY, C. O. ..... 418 Osler Bldg.
ESKRIDGE, J. B. ..... 1200 North Walker
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FAGIN, HERMAN ..... 400 West Tentn St.
FARIS, BRUNEL D. ..... Medical Arts Bldg.
FELTS, GEO. R. ..... Osler Bldg.
FERGUSON, E. G. ..... Medical Arts Bldg.
FERGUSON, E. S. ..... Medical Arts Bldg.
FISHMAN, C. J. ..... 132 West Fourth St.
FITZ, R. G., Taming Fu Hoppi, Prov. No. China
FLESHER, THOS. H. ..... Edmond
FOERSTER, HERVEY A. ..... 119 North Broadway
FORD, HARRY C. ..... Medical Arts Bldg.
FRIERSON, S. E. ..... Medical Arts Bldg.
FRYER, S. R. ..... 119 West Fifth St.
FULTON, CLIFFORD C. ..... Medical Arts Bldg.
FULTON, GEO. S. ..... American Natl. Bank Bldg.
GARRISON, GEO. H. ..... 1200 North Walker
GEE, O. J. ..... Medical Arts Bldg.
GIBBS, ALLEN G. ..... Ramsey Tower Bldg.
GLOMSET, JOHN L. ..... 621 Osler Bldg.
GOLDFAIN, E. ..... Medical Arts Bldg.
GOODWIN, R. Q. ..... Medical Arts Bldg.
GRAHAM, ALLISON T. ..... 26 S.W. 25th
GRAY, J. WORTH ..... 1315 South Agnew
HALL, CLARK H. ..... Medical Arts Bldg.
HANEY, A. H. ..... Perrine Bldg.
HAMMONDS, O. O. ..... 623 North East 18th St.
HARBISON, FRANK ..... Terminal Bldg.
HARBISON, J. E. ..... Terminal Bldg.
HARRIS, HENRY H. ..... 1200 N. Walker
HASKETT, PAUL E. ..... Hales Bldg.
HASSLER, GRACE CLAUSE ..... Med. Arts Bldg.
HATCHETT, J. A. ..... Medical Arts Bldg.
HAYES, BASIL A. ..... 625 North West 10th St.
HAYGOOD, CHAS. W. ..... Municipal Bldg.
HAZEL, O. G. ..... Medical Arts Bldg.
HEATLEY, JOHN E. ..... Medical Arts Bldg.
HERRMANN, JESS ..... Medical Arts Bldg.
HETHERINGTON, A. J. ..... 2014 Gatewood Ave.
HICKS, F. B. ..... Medical Arts Bldg.
HIRSHFIELD, A. C. ..... Medical Arts Bldg.
HOLLIDAY, J. R. ..... 1200 North Walker
HOOD, F. REDDING ..... 1200 North Walker
HOOT, M. P. ..... 301 West 12th St.
HOWARD, R M. ..... Osler Bldg.
HUGGINS, J. R. ..... Medical Arts Bldg.
HULL, WAYNE M. ..... 800 N.E. 13th
HYROOP, GILBERT L. ..... Medical Arts Bldg.
ISHMAEL, WM. K. ..... 717 North Robinson
JACKSON, A. R. ..... 2528½ South Robinson
JACOBS, MINARD F. ..... Medical Arts Bldg.
JANCO, LEON ..... 10 West Park Place
JETER, HUGH ..... 1200 North Walker
JOBE, VIRGIL R. ..... 717 North Robinson
JOLLY, W. J. ..... 615 West 14th St.
JONES, HUGH ..... Medical Arts Bldg.
KELLER, W. F. ..... Medical Arts Bldg.
KELLY, JOHN F. ..... Medical Arts Bldg.
KELSO, JOSEPH W. ..... Medical Arts Bldg.
KELTZ, BERT F. ..... Medical Arts Bldg.
KERNODLE, S. E. ..... First Natl. Bldg.
KIMBALL, G. H. ..... Medical Arts Bldg.
KUHN, JOHN F. ..... Medical Arts Bldg.
KUHN, Jr., JOHN F. ..... Medical Arts Bldg.
LACHMANN, ERNST ..... 801 East 13th St.
LAIN, E. S. ..... Medical Arts Bldg.
LAMB, JOHN H. ..... Medical Arts Bldg.
LAMBKE, PHIL M. ..... 605 North East 28th St.
LaMOTTE, GEORGE A. ..... Colcord Bldg.
LANGSFORD, WM. ..... 323 N.E. 11th
LANGSTON, WANN ..... Medical Arts Bldg.
LAWSON, PAT ..... 119 N. Broadway
LEE, CLARENCE E. ..... Hightower Bldg.
LEMON, C. W. ..... 119 No. Broadway
LEWIS, A. R. ..... Hightower Bldg.
LINDSTROM, W. C. ..... Medical Arts Bldg.
LINGENFELTER, F. M. ..... 1200 North Walker
LITTLE, JOHN R. ..... Ramsey Tower
LONG, LEROY ..... Medical Arts Bldg.
LONG, LEROY D. ..... Medical Arts Bldg.
LONG, WENDELL ..... Medical Arts Bldg.
LOWRY, DICK ..... 1200 North Walker
LOWRY, TOM ..... 1200 North Walker
LOY, C. F. ..... Perrine Bldg.
LUTON, JAMES P. ..... Medical Arts Bldg.
McCABE, R. S. ..... Medical Arts Bldg.
MacDONALD, J. C. ..... 300 West Twelfth St.
MARGO, E. ..... 717 North Robinson St.
MARTIN, HOWARD ..... Ramsey Tower
MARTIN, J. T. ..... 1200 N. Walker
MASTERSON, MAUDE M. ..... 119 No. Broadway
McBRIDE, Earl D. ..... 717 North Robinson
McGEE, J. P. ..... 404 Osler Bldg.
McHENRY, D. D. ..... 508 North West 15th St.
McHENRY, L. C. ..... Medical Arts Bldg.
McKINNEY, MILAM ..... Medical Arts Bldg.
McNEILL, PHIL M. ..... Medical Arts Bldg.
MECHLING, GEO. S. ..... Osler Bldg.
MELVIN, JAMES H. ..... 119 No. Robinson
MESSENBAUGH, J. F. ..... Colcord Bldg.
MILES, W. H. ..... Municipal Bldg.
MILLER, NESBITT L. ..... 119 No. Broadway
MILLS, R. C. ..... Hightower Bldg.
MOFFETT, JOHN A. ..... University Hospital
MOORE, C. D. ..... Perrine Bldg.
MOORE, ELLIS ..... Medical Arts Bldg.
MOOR, H. D. ..... 800 East Thirteenth St.
MOORMAN, FLOYD ..... 1200 North Walker
MOORMAN, L. J. ..... 1200 North Walker
MORGAN, C. A. ..... First Natl. Bldg.
MORLEDGE, WALKER ..... Osler Bldg.
MORRISON, H. C. ..... 807 North West 23rd St.
MULVEY, BERT M. ..... Medical Arts Bldg.
MURDOCH, R. L. ..... Medical Arts Bldg.
MUSICK, ELMER R. ..... Medical Arts Bldg.
MUSICK, V. H. ..... Medical Arts Bldg.
MUSSILL, W. M. ..... Medical Arts Bldg.

MYERS, RALPH E. ..... 1200 North Walker
NAGLE, PATRICK ..... Medical Arts Bldg.
NEFF, EVERETT B. ..... 1200 No. Walker
NICHOLSON, B. H. ..... 301 N.W. 12th
NOELL, ROBT. L. ..... Medical Arts Bldg.
O'DONOGHUE, D. H. ..... Medical Arts Bldg.
OWEN, CANNON A. ..... 311 N.W. 9th
PATTERSON, ROBT. U. ..... 801 North East 13th St.
PAULUS, D. D. ..... 301 West Twelfth St.
PENICK, GRIDER ..... Colcord Bldg.
PHELPS, A. S. ..... Medical Arts Bldg.
PINE, JOHN S. ..... Medical Arts Bldg.
POSTELLE, J. M. ..... Medical Arts Bldg.
POUNDERS, CARROLL M. ..... 1200 North Walker
PRICE, J. S. ..... 1200 North Walker
RECK, J. A. ..... Colcord Bldg.
REED, HORACE, ... Osler Bldg.
REED, JAMES ROBERT ..... Medical Arts Bldg.
REICHMANN, RUTH S. ..... 124 North West 15th St.
RIELY, LEA A. ..... Medical Arts Bldg.
RILEY, J. W. ..... 119 West Fifth St.
ROBINSON, J. H. ..... 301 West Twelfth St.
RODDY, JOHN A. ..... Ramsey Tower
ROGERS, GERALD ..... Osler Bldg.
ROSENBERGER, F. E. ..... Perrine Bldg.
ROUNTREE, C. R. ..... 1200 North Walker
RUCKS, Jr., W. W. ..... 300 West Twelfth St.
RUCKS, W. W. ..... 300 West Twelfth St.
SADLER, LEROY H. ..... Osler Bldg.
SANGER, F. A. ..... Key Bldg.
SANGER, F. M. ..... Key Bldg.
SANGER, WINNIE M. ..... Key Bldg.
SEIBOLD, GEO. J. ..... 1200 N. Walker
SERWER, MILTON ..... 1200 North Walker
SEWELL, DAN R. ..... 400 North West Tenth St.
SHELTON, J. W. ..... Medical Arts Bldg.
SHEPPARD, MARY V. S. ..... 1200 North Walker
SHORBE, HOWARD B. ..... Medical Arts Bldg.
SIMON, BETTY HARRIS ..... 1000 N.W. 40th
SMITH, CHAS. A. ..... Medical Arts Bldg.
SMITH, D. G. ..... First National Bank Bldg.
SMITH, RALPH A. ..... 443½ North West 23rd St.
SNOW, J. B. ..... 1200 North Walker
STANBRO, GEO. E. ..... Medical Arts Bldg.
STARRY, L. J. ..... 1200 North Walker
STILLWELL, ROBT. J. ..... American Natl. Bldg.
STONE, S. N. ..... Edmond
STOUT, M. E. ..... 209 West Thirteenth St.
STRADER, S. ERNEST ..... Hightower Bldg.
SULLIVAN, ELIJAH S. ..... Medical Arts Bldg.
SULLIVAN, ERNEST ..... Hightower Bldg.
TABOR, GEO. O. ..... First National Bldg.
TAYLOR, C. B. ..... Medical Arts Bldg.
TAYLOR, W. M. ..... 1200 North Walker
THOMPSON, W. J. ..... 1200 N. Walker
TOOL, DONOVAN ..... Edmond
TOWNSEND, CARY W. ..... Medical Arts Bldg.
TURNER, HENRY H. ..... 1200 North Walker
UNDERWOOD, E. L. ..... 2604 No. Shartel
VALBERG, ERNEST ..... Perrine Bldg.
VON WEDEL, CURT ..... 610 N. W. 9th St.
WAILS, T. G. ..... Medical Arts Bldg.
WAINWRIGHT, TOM ..... Medical Arts Bldg.
WARMACK, J. C. ..... 1615 No. Robinson
WATSON, I. N. ..... Edmond
WATSON, O. ALTON ..... 1200 N. Walker
WATSON, R. D. ..... Britton
WEIR, MARSHALL W. ..... Ramsey Tower
WELLS, EVA ..... Medical Arts Bldg.
WELLS, WALTER W. ..... Medical Arts Bldg.
WEST, W. K. ..... 1200 North Walker
WESTFALL, L. M. ..... Medical Arts Bldg.
WHITE, ARTHUR W. ..... Medical Arts Bldg.
WHITE, OSCAR ..... 1200 North Walker
WHITE, PHIL E. ..... Perrine Bldg.
WILDMAN, S. F. ..... Medical Arts Bldg.
WILKINS, HARRY ..... Medical Arts Bldg.
WILLIAMS, L. C. ..... Osler Bldg.
WILLIAMSON, W. H. ..... Hightower Bldg.
WILSON, KENNETH J. ..... Medical Arts Bldg.
WOLFF, J. P. ..... Osler Bldg.
WOODWARD, NEIL W. ..... 1200 North Walker
WRIGHT, HARPER ..... 240 West Commerce

OKMULGEE

ALEXANDER, ROBT. L. ..... Okmulgee
BOLLINGER, I. W. ..... Henryetta
BOSWELL, H. D. ..... Henryetta
CARLOSS, T. C. ..... Morris
CARNELL, M. D. ..... Okmulgee
COTTERAL, J. R. ..... Henryetta
EDWARDS, J. G. ..... Okmulgee
GLISMANN, M. B. ..... Okmulgee
HOLMES, A. R. ..... Henryetta
HUBBARD, RALPH ..... 1501 E. 11th, Okla. City
HUDSON, W. S. ..... Okmulgee
KILPATRICK, G. A. ..... Henryetta
LESLIE, S. B. ..... Okmulgee
MABEN, CHAS. S. ..... Okmulgee
MATHENEY, J. C. ..... Okmulgee
McKINNEY, G. Y. ..... Henryetta
MING, C. M. ..... Okmulgee
MITCHENER, W. C. ..... Okmulgee
NELSON, J. P. ..... Beggs
RAINS, H. L. ..... Okmulgee
RANDEL, D. M. ..... Okmulgee
RANDEL, H. O. ..... Okmulgee
RODDA, E. D. ..... Okmulgee
SIMPSON, N. N. ..... Henryetta
SMITH, C. E. ..... Henryetta
TORRANCE, L. B. ..... Okmulgee
VERNON, W. C. ..... Okmulgee
WALLACE, V M. ..... Morris
WATSON, F. S. ..... Okmulgee

OSAGE

AARON, W. H. ..... Pawhuska
ALEXANDER, EVERETT T. ..... Barnsdall
BAYLOR, R. A. ..... Fairfax
DALY, J. F. ..... Pawhuska
DOZIER, B. E. ..... Snidler
GOVAN, T. P. ..... Pawhuska
GUILD, C. H. ..... Shidler
HEMPHILL, G. K. ..... Pawhuska
HEMPHILL, P. H. ..... Pawhuska
KARASEK, M. ..... Shidler
KEYES, EDW. C. ..... Shidler
KIMBALL, MELVIN C. ..... Webb City
LIPE, E. N. ..... Fairfax
LOGAN, C. K. ..... Hominy
RAGAN, T. A. ..... Fairfax
RUST, M. E. ..... Pawhuska
SMITH, R. O. ..... Hominy
SULLIVAN, B. F. ..... Barnsdall
WALKER, G. I. ..... Hominy
WALKER, ROSCOE ..... Pawnuska
WEIRICH, C. R. ..... Pawhuska
WILLIAMS, CLAUDE W. ..... Pawhuska
WORTEN, D. ..... Pawhuska

OTTAWA

AISENSTADT, E. ALBERT ..... Picher
BARRY, J. R. ..... Picher
BUTLER, V. V. ..... Picher
CANNON, R. F. ..... Miami
CHESNUT, W. G. ..... Miami
CRAIG, J. W. ..... Miami
COLVERT, G. W. ..... Miami
CONNELL, M. A. ..... Picher
COOTER, A. M. ..... Miami
CUNNINGHAM, P. J. ..... Miami
DeARMAN, M. M. ..... Miami
DeTAR, G. A. ..... Miami
DOLAN, W. M. ..... Picher

HAMPTON, J. B. ..... Commerce
HETHERINGTON, L. P. ..... Miami
HUGHES, A. R. ..... Wyandotte
JACOBY, J. S. ..... Commerce
KERR, W. C. ..... Picher
LANNING, J. M. ..... Picher
LIGHTFOOT, J. B. ..... Miami
McKAY, ED. D. ..... Miami
McNAUGHTON, G. P. ..... Miami
MILLER, H. K. ..... Fairland
PERSLEY, TURNER ..... Pitcher
RALSTON, B. W. ..... Commerce
RITCHEY, H. C. ..... Picher
RUSSELL, RICHARD ..... Picher
SAYLES, W. JACKSON ..... Miami
SHELTON, B. W. ..... Miami
SIEVERS, CHAS. M. ..... Picher
SMITH, W. B. ..... Fairland
WORMINGTON, F. L. ..... Miami

PAWNEE

BERNSTEIN, MAXWELL ..... Pawnee
BROWNING, R. L. ..... Pawnee
JONES, R. E. ..... Pawnee
LeHEW, ELTON W. ..... Pawnee
LeHEW, J. L. ..... Pawnee
SADDORIS, M. L. ..... Cleveland
SPALDING, H. B. ..... Ralston

PAYNE

ADAMS, JAMES E. ..... Cushing
BASSETT, C. M. ..... Cushing
CLEVERDON, L. A. ..... Stillwater
DAVIS, BENJ. ..... Cushing
DAVIDSON, W. N. ..... Cushing
FRY, POWELL E. ..... Stillwater
HACKLER, JOHN W. ..... Stillwater
HARRIS, E. M. ..... Cushing
HERRINGTON, D. J ..... Cushing
HOLBROOK, R. W. ..... Perkins
LEATHEROCK, R. E. ..... Cushing
MANNING, H. C. ..... Cushing
MARTIN, EMMETT O. ..... Cushing
MARTIN, JOHN F. ..... Stillwater
MARTIN, J. W. ..... Cushing
MITCHELL, L. A. ..... Stillwater
OEHLSCHLAGER, F. KEITH ..... Yale
PERRY, D. L. ..... Cushing
RICHARDSON, P. M. ..... Cushing
ROBERTS, R. E. ..... Stillwater
SMITH, A. B. ..... Stillwater
STRAHN, EVA ..... Stillwater
WAGGONER, ROY E. ..... Stillwater
WALTRIP, J. R. ..... Yale
WILHITE, L. R. ..... Perkins

PITTSBURG

BARTHELD, F. T. ..... McAlester
BAUM, F. J. ..... McAlester
BRIGHT, J. B. ..... Kiowa
BUNN, A. D. ..... Savanna
COLLINS, GLENN J. ..... McAlester
DORROUGH, JOE ..... Haileyville
GEORGE, L. J. ..... Stuart
GREENBERGER, E. D. ..... McAlester
KIES, B. B. ..... Wetumka
KILPATRICK, G. A. ..... McAlester
KLOTZ, W. F. ..... McAlester
KUYRKENDALL, L. C. ..... McAlester
LIVELY, CLAUDE E. ..... McAlester
McCARLEY, T. H. ..... McAlester
MILLER, F. A. ..... Hartshorne
MUNN, J. A. ..... McAlester
NORRIS, T. T. ..... Krebs
PARK, J. P. ..... McAlester
PEARCE, C. M., State Capitol Bldg., Oklahoma City
PEMBERTON, R. K. ..... McAlester
RAMSAY, W. G. ..... Quinton
RICE, O. W. ..... McAlester
RUSSELL, ALLEN R. ..... McAlester
SAMES, W. W. ..... Hartshorne
SHULLER, E. H. ..... McAlester
THOMAS, ERNEST ..... McAlester
WAIT, WILL C. ..... McAlester
WILLIAMS, C. O. ..... McAlester
WILLOUR, L. S. ..... McAlester
WILSON, HERBERT A. ..... McAlester

PONTOTOC

BRECO, J. G. ..... Ada
BRYDIA, CATHERINE ..... Ada
BURROWS, L. I. ..... Ada
CANADA, E. A. ..... Ada
CRAIG, JOHN R. ..... Ada
COWLING, ROBT. E. ..... Ada
CUMMINGS, ISHAM L. ..... Ada
DEAN, W. F. ..... Ada
EVANS, R. ERLE ..... Ada
FRY, MELVIN ..... Stonewall
GULLATT, E. M. ..... Ada
HINES, SIDNEY, J. T. ..... Fittstown
LEWIS, E. F. ..... Ada
LEWIS, MILES L. ..... Ada
MAHON, GEO. S. ..... Ada
McDONALD, GLEN W. ..... Ada
McKEEL, SAM A. ..... Ada
McNEW, M. C. ..... Ada
MILLER, OSCAR H. ..... Ada
MOREY, JOHN B. ..... Ada
NEEDHAM, C. F. ..... Ada
PETERSON, WM. G. ..... Ada
ROSS, SAMUEL P. ..... Ada
RUTLEDGE, JAS. A. ..... Ada
SUGG, ALFRED R. ..... Ada
WEBSTER, M. M. ..... Ada
WELBORN, ORANGE E. ..... Ada
YATES, JUNE ..... Ada

POTTAWATOMIE

ANDERSON, R. M. ..... Shawnee
APPLEWHITE, G. H. ..... Shawnee
BAKER, M. A. ..... Shawnee
BALL, W. A. ..... Wanette
BAXTER, GEO. S. ..... Shawnee
BLOUNT, W. T. ..... Maud
BROWN, R. A. ..... Prague
BYRUM, J. M. ..... Shawnee
CAMPBELL, H. G. ..... St. Louis, Okla.
CARSON, F. L. ..... Shawnee
CORDELL, U. S. ..... McComb
CULBERTSON, R. R. ..... Maud
CULLUM, J. E. ..... Earlsboro
FORTSON, J. L. ..... Tecumseh
GALLAHER, F. C. ..... Shawnee
GALLAHER, PAUL ..... Shawnee
GALLAHER, W. M. ..... Shawnee
GASTON, JOHN I. ..... Shawnee
GILLICK, D. W. ..... Shawnee
HUGHES, H. E. ..... Shawnee
HUGHES, J. E. ..... Shawnee
IRBY, J. P. ..... Maud
KAYLOR, R. C. ..... McCloud
KEEN, FRANK M. ..... Shawnee
MATTHEWS, W. F. ..... Tecumseh
McADAMS-WILLIAMS, ALPHA ..... Shawnee
McFARLING, A. C. ..... Shawnee
NEWLIN, FRANCES P. ..... 3748 Cambridge, Kansas City
PARAMORE, C. P. ..... Shawnee
RICE, E. E. ..... Shawnee
ROWLAND, T. D. ..... Shawnee
ROYSTER, J. H. ..... Wanette

STEVENS, WALTER S., 315 P. O. Bldg., Okla. City
WALKER, J. A. ..... Shawnee
WILLIAMS, A. J. ..... McLoud

PUSHMATAHA

BALL, ERNEST ..... Sulphur
CONNALLY, D. W. ..... Antlers
GUINN, E. ..... Antlers
HUCKABAY, B. M. ..... Antlers
KIRKPATRICK, J. ..... Tuskahoma
LAWSON, JOHN S. ..... Antlers
PATTERSON, E. S. ..... Antlers

ROGERS

ANDERSON, F. A. ..... Claremore
ANDERSON, P. S. ..... Claremore
ANDERSON, W. D. ..... Claremore
BASSMAN, CAROLINE ..... Claremore
BESON, C. W. ..... Claremore
BIGLER, EARL E. ..... Claremore
COLLINS, B. F. ..... Claremore
HOWARD, W. A. ..... Chelsea
JENNINGS, K. D. ..... Chelsea
MELOY, R. C. ..... Claremore
NELSON, D. C. ..... Claremore

SEMINOLE

BLACK, W. R. ..... Seminole
DEATON, A. N. ..... Wewoka
GIESEN, A. F. ..... Konawa
HUDDLESTON, W. T. ..... Konawa
JONES, W. E. ..... Seminole
KNIGHT, CLAUDE B. ..... Wewoka
KNIGHT, W. L. ..... wewoka
LONG, W. J. ..... Konawa
MILLS, N. W. ..... Seminole
MOSHER, D. D. ..... Seminole
PRICE, J. T. ..... Seminole
REEDER, H. M. ..... Konowa
STEPHENS, A. B. ..... Seminole
TURLINGTON, M. M. ..... Seminole
WALKER, A. A. ..... Wewoka
WARE, T. H. ..... Seminole

SEQUOYAH

MORROW, J. A. ..... Sallisaw

STEPHENS

CARMICHAEL, J. B. ..... Duncan
COKER, JOHN K. ..... Duncan
DOWNING, G. G. ..... Lawton
HARGROVE, FRED T. ..... Duncan
IVY, W. S. ..... Duncan
KING, E. G. ..... Duncan
LINDLEY, E. C. ..... Duncan
McCLAIN, W. Z. ..... Marlow
McMAHAN, A. M. ..... Duncan
PATTERSON, J. L. ..... Duncan
PRUITT, C. C. ..... Comanche
RICHARDSON, R. W. ..... Duncan
SALMON, W. T. ..... Duncan
SMITH, L. P. ..... Marlow
TALLEY, C. N. ..... Marlow
THOMASSON, E. B. ..... Duncan
WATERS, CLAUDE B. ..... Duncan
WEEDN, Jr., A. J. ..... Duncan

TEXAS

BLUE, JOHNNY A. ..... Guymon
HAYES, R. B. ..... Guymon
LEE, DANIEL S. ..... Guymon
SMITH, MORRIS ..... Guymon
THURSTON, H. E. ..... Texhoma

TILLMAN

ALLEN, C. C. ..... Frederick
ARRINGTON, J. E. ..... Frederick
BACON, O. G. ..... Frederick
CHILDERS, J. E. ..... Tipton
DAVIS, W. W. ..... Davidson
FISHER, R. L. ..... Frederick
FUQUE, W. A. ..... Grandfield
OSBORN, JR., JAMES D. ..... Frederick
*REYNOLDS, J. C. ..... Frederick
SPURGEON, T. F. ..... Frederick

TULSA

ALLEN, V. K. ..... 1001 Medical Arts Bldg.
ALLISON, T. P. ..... Sand Springs
ARMSTRONG, O. C. ..... 915 Medical Arts Bldg.
AMENT, C. M. ..... 305 Ritz Bldg.
ATCHLEY, R. Q. ..... 507 Medical Arts Bldg.
ATKINS, PAUL N. ..... 1011 Medical Arts Bldg.
BARHAM, J. H. ..... 314 New Daniel Bldg.
BEESLEY, W. W. ..... 501 Medical Arts Bldg.
BEYER, J. W. ..... 621 McBirney Bldg.
BILLINGTON, J. J. ..... 404 Medical Arts Bldg.
BLACK, HAROLD J. ..... 209 Medical Arts Bldg.
BOLTON, J. F. ..... 211 Medical Arts Bldg.
BRADFIELD, S. J. ..... 607 Medical Arts Bldg.
BRADLEY, C. E. ..... 202 Medical Arts Bldg.
BRANLEY, B. L. ..... 315 Med. Arts Bldg.
BRASWELL, JAS. C. ..... 1109 Medical Arts Bldg.
BROGDEN, J. C. ..... 414-15 Medical Arts Bldg.
BROOKSHIRE, J. E. ..... 313 Ritz Bldg.
BROWN, WALTER E. ..... 1923 S. Utica
BROWNE, HENRY S. ..... 615 Medical Arts Bldg.
BRYAN, Jr., W. J. ..... 801 Medical Arts Bldg.
CALHOUN, C. E. ..... Sand Springs
CALHOUN, WALTER H. ..... 405 Daniels Bldg.
CAMERON, PAUL B. ..... 604 S. Cincinnati
CAMPBELL, W. M. ..... 10½ North Lewis
CARNEY, A. B. ..... 402 Atlas Life Bldg.
CHALMERS, J. S. ..... Sand Springs
CHARBONNET, P. N. ..... 206 Med. Arts Bldg.
CHILDS, D. B. ..... 1226 South Boston
CHILDS, HENRY C. ..... 1226 South Boston
CHILDS, J. W. ..... 1226 South Boston
CLINTON, FRED S. ..... 823 Wright Bldg.
CLULOW, GEO. H. ..... 410 McBirney Bldg.
COHENOUR, E. L. ..... 1102 Medical Arts Bldg.
COOK, W. ALBERT ..... 1006 Medical Rrts Bldg.
COULTER, T. B. ..... 1011 Medical Arts Bldg.
CRAWFORD, WM. S. ..... 1228 Exchange Bank Bldg.
CRONK, FRED Y. ..... 801-05 Medical Arts Bldg.
DAILY, R. E. ..... Bixby
DAVIS, A. H. ..... 710 Medical Arts Bldg.
DAVIS, B. J. ..... Sand Springs
DAVIS, T. H. ..... 404 Medical Arts Bldg.
DEAN, W. A. ..... 610 Medical Arts Bldg.
DENNY, E. R. ..... 1105 Medical Arts Bldg.
DUNLAP, ROY W. ..... 808 Medical Arts Bldg.
EADS, CHAS H. ..... 607 Medical Arts Bldg.
EASON, K. K. ..... 401 Atlas Life Bldg.
EDWARDS, D. L. ..... 203 Philcade Bldg.
EVANS, HUGH J. ..... 303 Medical Arts Bldg.
FARRIS, H. LEE ..... 303 Medical Arts Bldg.
FLACK, F. L. ..... Natl. Bank of Tulsa Bldg.
FORD, H. W. ..... 417 Oklahoma Natl. Bank Bldg.
FRANKLIN, S. E. ..... Broken Arrow
FULCHER, JOSEPH ..... 417 Medical Arts Bldg.
*GARABEDIAN, G. ..... 15 West 13th St.
GARRETT, D. L. ..... 701 Medical Arts Bldg.
GILBERT, J. B. ..... 307 Roberts Bldg.

*Deceased.

GLASS, FRED A. ....404 Medical Arts Bldg.
GODDARD, R. K. ....Skiatook
GOODMAN, SAMUEL ....603 Medical Arts Bldg.
GORRELL, J. FRANKLIN, 610 Medical Arts Bldg.
GRAHAM, HUGH C. ....1307 So. Main St.
GREEN, HARRY ....1116 Medical Arts Bldg.
GROSSHART, PAUL ....302 Medical Arts Bldg.
HALL, G. H. ....427 McBirney Bldg.
HARALSON, CHAS. H. ....816 Medical Arts Bldg.
HARRIS, BUNN, ...Box 356, Jenks
HART, M. M. ....1232 South Boulder
HART, M. O. ....1232 South Boulder
HASKINS, THOS. M. ....814 Daniels Bldg.
HAYS, LUVERN ....Med. Arts Bldg.
HENDERSON, F. W. ....304 Medical Arts Bldg.
HENLEY, M. D. ....911 Medical Arts Bldg.
HENRY, G. H. ....801 Medical Arts Bldg.
HILLE, H. L. ....Collinsville
HOKE, C. C. ....207 Philtower Bldg.
HOOPER, J. S. ....Heavener
HOOVER, WILKIE D. ....201 Philcade Bldg.
HOUSER, M. A. ....606 Beacon Life Bldg.
HOTZ, CARL J. ....604 South Cincinnati
HUBER, WALTER A. ....1113-14 Medical Arts Bldg.
HUDSON, MARGARET G., 411 Medical Arts Bldg.
HUDSON, DAVID V. ....215 Medical Arts Bldg.
HUMPHREY, B. H. ....Sperry
HUTCHISON, A. ....Bixby
HYATT, EMRY G. ....604 South Cincinnati
JACKSON, L. T. ....206½ South Main
JOHNSON, CHAS. D. ....1117 Medical Arts Bldg.
JOHNSON, E. O. ....206 Medical Arts Bldg.
JOHNSON, R. R. ....Sand Springs
JONES, W. M. ....204 Medical Arts Bldg.
JUSTICE, H. B. ....303 Roberts Bldg.
KEMMERLY, H. P. ....902 Medical Arts Bldg.
KRAMER, A. C. ....415 Medical Arts Bldg.
LARRABEE, W. S. ....411 Medical Arts Bldg.
LAWS, J. H. ....Broken Arrow
LEE, J. K. ....212-14 Medical Arts Bldg.
LeMASTER, D. W. ....902 Medical Arts Bldg.
LHEVINE, MORRIS B. ....1007 Medical Arts Bldg.
LONEY, W. R. R. ....301 Medical Arts Bldg.
LOWE, J. O. ....402 Atlas Bldg.
LYNCH, T. J. ....201 Philcade Bldg.
MacDONALD, D. M. ....1739 South Utica
MARKLAND, JAMES D. ....Medical Arts Bldg.
MARGOLIN, BERTHA ....214 Medical Arts Bldg.
MAYGINNIS, P. H. ....505 Palace Bldg.
McCOMB, L. A. ....801 Medical Arts Bldg.
McDONALD, J. E. ....310 Medical Arts Bldg.
McGILL, RALPH A. ....1010 Medical Arts Bldg.
McGUIRE, H. J. ....910 Medical Arts Bldg.
McKELLAR, MALCOLM ....604 South Cincinnati
McLEAN, B. W. ....Jenks
McQUAKER, MOLLY ....1648 East 13th St.
MILLER, GEORGE H. ....206 Atlas Bldg.
MINER, J. L. ....810 Medical Arts Bldg.
MISHLER, D. L. ....604 S. Cincinnati
MOHRMAN, S. S. ....604 Daniels Bldg.
MUNDING, L. A. ....516 Medical Arts Bldg.
MURDOCK, H. D. ....1011 Medical Arts Bldg.
MURRAY, P. G. ....506 Medical Arts Bldg.
MURRAY, SILAS ....501 Medical Arts Bldg.
MYERS, F. C. ....502 Daniels Bldg.
NEAL, JAMES H. ....1944 North Denver Place
NELSON, I. A. ....1107 Medical Arts Bldg.
NELSON, F. J. ....603 Medical Arts Bldg.
NELSON, F. L. ....Atlas Life Bldg.
NELSON, M. O. ....307 Medical Arts Bldg.
NESBITT, E. P. ....917 Medical Arts Bldg.
NESBITT, P. P. ....917 Medical Arts Bldg.
NORMAN, G. R. ....17½ North Lewis
NORTHRUP, L. C. ....410 McBirney Bldg.
OSBORN, GEO. R. ....1105 Medical Arts Bldg.
PAVY, C. A. ....801 Medical Arts Bldg.
PEDEN, J. C. ....612 Medical Arts Bldg.
PERRY, HUGH, ...416 McBirney Bldg.
PERRY, JOHN C. ....618 McBirney Bldg.
PIGFORD, A. W. ....1001 Medical Arts Bldg.
PIGFORD, CHARLES ....Medical Arts Bldg.
PIGFORD, R. C. ....1001 Medical Arts Bldg.
PITTMAN, COLE D. ....1009 Medical Arts Bldg.
PORTER, H. H. ....510 Medical Arts Bldg.
PRICE, HARRY ....407 Medical Arts Bldg.
RAMEY, CLYDE ....612 Palace Bldg.
RAY, R. G. ....401 Atlas Bldg.
REESE, K. C. ....1101 Medical Arts Bldg.
REYNOLDS, J. L. ....305 Palace Bldg.
RHODES, R. E. LEE ....509 Medical Arts Bldg.
RICHEY, S. M. ....3830 West 44th St.
ROBERTS, T. R. ....417 Wright Bldg.
ROGERS, J. W. ....407 Medical Arts Bldg.
ROTH, A. W. ....607 Medical Arts Bldg.
RUPRECHT, H. A. ....604 South Cincinnati
RUPRECHT, MARCELIA ....604 South Cincinnati
RUSHING, F. E. ....505 Medical Arts Bldg.
RUSSELL, G. R. ....604 South Cincinnati
SCHRECK, P. M. ....603 Medical Arts Bldg.
SEARLE, M. J. ....202 Medical Arts Bldg.
SHEPARD, R. M. ....306 Medical Arts Bldg.
SHEPARD, S. C. ....706 Medical Arts Bldg.
SHERWOOD, R. G. ....412 Wright Bldg.
SHIPP, J. D. ....Sisler Clinic
SHOWMAN, W. A. ....409 Medical Arts Bldg.
SIMPSON, CARL F. ....502 Medical Arts Bldg.
SINCLAIR, F. D. ....Springer Clinic
SIPPEL, M. E. ....1542 East 15th St.
SISLER, WADE ....807 South Elgin
SMITH, D. O. ....604 South Cincinnati St.
SMITH, N. R. ....703 Medical Arts Bldg.
SMITH, ROY L. ....809 Medical Arts Bldg.
SMITH, R. N. ....1017 Medical Arts Bldg.
SMITH, RONALD R. ....403 Daniels Bldg.
SMITH, W. O. ....203 Philcade Bldg.
SPANN, L. A. ....305 Roberts Bldg.
SPRINGER, M. P. ....604 South Cincinnati
STALLINGS, T. W. ....724 South Elgin
STANLEY, MONT V. ....901 No. Denver
STEVENSON, JAS. ....615 Medical Arts Bldg.
STEWART, H. B. ....2500 East 27th Place
STUART, FRANK A. ....311 Medical Arts Bldg.
STUART, L. H. ....1107 Medical Arts Bldg.
SUMMERS, C. S. ....611 Daniels Bldg.
SWANSON, K. P. ....Springer Clinic
TAYLOR, J. H. ....1304½ West 17th
TRAINOR, W. J. ....1011 Medical Arts Bldg.
TURNBOW, W. R. ....908 Medical Arts Bldg.
UNDERWOOD, D. J. ....414-15 Medical Arts Bldg.
UNDERWOOD, F. L. ....1001 Medical Arts Bldg.
UNGERMAN, ARNOLD H. ....902 Med. Arts Bldg.
VENABLE, S. C. ....1125 South Quaker
WALKER, W. A. ....322 Kennedy Bldg.
WALLACE, J. E. ....914 Medical Arts Bldg.
WALL, G. A. ....902 Medical Arts Bldg.
WARD, B. W. ....823 Wright Bldg.
WEST, T. H. ....612 Medical Arts Bldg.
WHITE, N. STUART ....416 Medical Arts Bldg.
WHITE, P. C. ....312 Medical Arts Bldg.
WILEY, A. RAY ....812 Medical Arts Bldg.
WITCHER, E. K. ....511 Medical Arts Bldg.
WITCHER, R. B. ....910 Medical Arts Bldg.
WOODSON, FRED E. ....908 Medical Arts Bldg.
ZINK, ROY ....807 Daniels Bldg.

WAGONER

BATES, S. R. ....Wagoner
CRANE, FRANCIS S. ....Wagoner
PLUNKETT, J. H. ....Wagoner
RIDDLE, H. K ....Coweta

WASHINGTON

ATHEY, J. V. ....Bartlesville
BEECHWOOD, E. E. ....Bartlesville
CHAMBERLIN, E. M. ....Bartlesville

CRAWFORD, H. G. ..... Bartlesville
CRAWFORD, J. E. ..... Bartlesville
CRAWFORD, T. O. ..... Bartlesville
DORSHEIMER, G. V. ..... Dewey
ETTER, F. S. ..... Bartlesville
GENTRY, RAYMOND C. ..... Bartlesville
GREEN, O. I. ..... Bartlesville
HUDSON, L. D. ..... Dewey
KINGMAN, W. H. ..... Bartlesville
LeBLANC, WM. ..... Ochelata
PARKS, S. M. ..... Bartlesville
REWERTS, F. C. ..... Bartlesville
SHIPMAN, W. H. ..... Bartlesville
SMITH, J. G. ..... Bartlesville
SOMERVILLE, O. S. ..... Bartlesville
STAVER, B. F. ..... Bartlesville
TORREY, J. P. ..... Bartlesville
VANSANT, J. P. ..... Dewey
WEBER, H C. ..... Bartlesville
WEBER, S. G. ..... Bartlesville
WELLS, C. J. ..... Bartlesville

WASHITA

BUNGARDT, A. H. ..... Cordell
DARNELL, E. E. ..... Colony
HARMS, J. H. ..... Cordell
JONES, J. PAUL ..... Dill
LIVINGSTON, L. G. ..... Cordell
McMURRAY, J. F. ..... Sentinel
NEAL, A. S. ..... Cordell
SULLIVAN, C. B. ..... Cordell
TRACY, C. M. ..... Sentinel
WEAVER, E. S. ..... Cordell
WEBER, A. ..... Bessie

WOODS

BENJEGERDES, THEODORE D. ..... Beaver
CLAPPER, E. P. ..... Waynoka
DOUGAN, A. L. ..... Amorita
ENSOR, D. B. ..... Hopeton
HALE, ARTHUR E. ..... Alva
HALL, RAY L. ..... Waynoka
McGREW, EDWIN A. ..... Beaver
ROGERS, CHAS. L. ..... Carmen
SIMON, JOHN F. ..... Alva
SIMON, WM. E. ..... Alva
STEPHENSON, ISHMEL F. ..... Alva
STEPHENSON, WALTER LOGAN ..... Aline
TEMPLIN, OSCAR E. ..... Alva
TRAVERSE, CLIFFORD A. ..... Alva

WOODWARD

CAMP, E. F. ..... Buffalo
DARWIN, D. W. ..... Woodward
DAVIS, J. J. ..... Higgins, Texas
DAY, J. L. ..... Supply
DUER, JOE L. ..... Taloga
DUNCAN, J. C. ..... Forgan
FORNEY, C. J. ..... Woodward
HILL, HARRY K. ..... Laverne
JOHNSON, H. L. ..... Supply
LEACHMAN, T. C. ..... Woodward
NEWMAN, FLOYD ..... Shattuck
NEWMAN, MESHECH HASKELL ..... Shattuck
NEWMAN, O. C. ..... Shattuck
NEWMAN, ROY ..... Shattuck
RUTHERFORD, V. M. ..... Woodward
SILVERTHORNE, C. R. ..... Woodward
TEDROWE, C. W. ..... Woodward
TRIPLETT, T. B. ..... Mooreland
VINCENT, DUKE W. Vici
WALKER, HARDIN ..... Rosston
WEAVER, GLENN A. ..... Supply
WILLIAMS, C. E. ..... Woodward

A list of the members has been submitted to the Secretary of each County Medical Society for correction. Less than half of these have been returned. If there are errors on this list it is not the fault of the State Secretary.